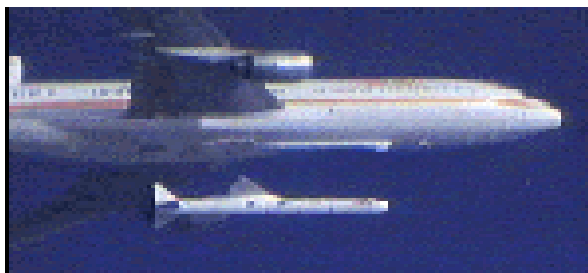




John F. Kennedy Space Center

LAUNCH SERVICES PROGRAM



# Pardon the Interruption Meeting November 2007



November 15, 2007

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# Fleet and Mission Status



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# IBEX Project Summary

## LAUNCH SERVICES PROGRAM

Mission	IBEX
Launch Date	2008/06/15
Launch Vehicle	Pegasus
Launch Period Window	Determined by Arg. of Perig
PPF	1555

	Sep	Oct	Nov
<b>OVERALL MISSION</b>	G	G	Y

### MISSION MANAGEMENT

	Sep	Oct	Nov
Observatory Status	G	G	G
Manifest/Range	Y	Y	Y
Integrated Schedule	G	G	Y
ICD	G	G	G
CDRLs (S/C & LSC)	G	G	G

### LAUNCH SITE

	Sep	Oct	Nov
LSSP	G	G	G
Customer Inputs	G	G	G
PPF	G	G	G
Launch Site Unique	Y	Y	Y
Spacecraft OPS	G	G	G

### SAFETY & MISSION ASSURANCE

	Sep	Oct	Nov
Mission Assurance	G	G	G
Safety	G	G	G
Quality	G	G	G
Reliability	G	G	G

### ENGINEERING

	Sep	Oct	Nov
Launch Vehicle	G	G	G
Mission Specific	Y	Y	Y
Certification	N/A	N/A	0
Mission Analysis	G	G	G
ERS/ERB	G	G	G
Launch PAD/GSE	G	G	G
Mission Unique IV&V	N/A	N/A	0

### COMM & TELEMETRY

	Sep	Oct	Nov
Communications	G	G	G
Telemetry	G	G	0

### BUSINESS

	Sep	Oct	Nov
Budget	G	G	G
Contracts	G	G	G

### LEGEND

Proceeding on Plan  
Area of Concern  
Significant Problem  
Not Evaluated  
Not Applicable

G
Y
R
0
N/A

### DOWNRANGE TELEMETRY

	Sep	Oct	Nov
Ground Stations	0	0	G
Deployables	0	0	N/A
P-3/OTTR	0	0	N/A

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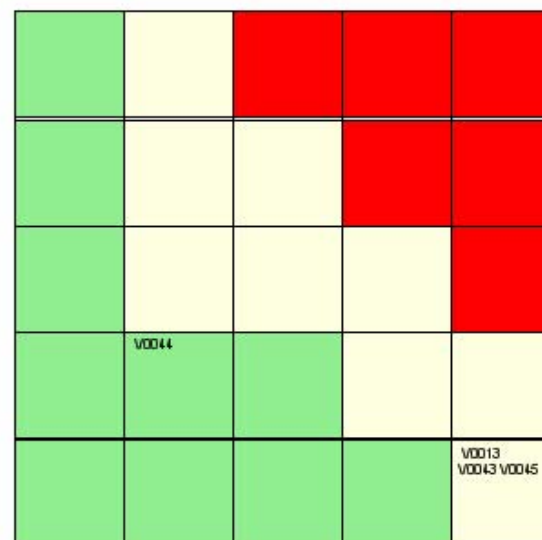
## IBEX - Open/Accepted Risks

LAUNCH SERVICES PROGRAM

		Condition
RYG Trend	RiskID	Consequence
Y	V0013	Suspected asymmetric lateral moments encountered at high angle of attack near MACH-1
		Loss of vehicle control
Y	V0043	LS SMA has noted various deficiencies within Orbital Science Corporations Quality Management System
		These quality management system deficiencies increase the likelihood that undetected technical problem(s) are present on the flight hardware.
Y	V0045	Delamination within Orion nozzle ECL on non-NASA vehicle
		Adverse heating of structural components leading to nozzle failure
G	V0044	Qualification failures of the frangible ring assembly during ambient and high temperature functionality test
		Degradation of mission performance due to sections of un-fractured joint causing unclean separation of the payload fairing.

P  
R  
C  
B  
  
C  
F  
  
C  
C  
C  
U  
R  
R  
E  
N  
C  
E

5  
91-  
100%  
4  
51-90%  
3  
11-50%  
2  
6-  
10%  
1  
1-5%



1 2 3 4 5

IMPACT

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## IBEX - Actions / Issues / Concerns

### LAUNCH SERVICES PROGRAM

There are no Actions.

Mission Summary Map	G/Y/R	ISSUES / CONCERNS	WI/ERS/Risk/Problem	Open Date	Due Date
Mission Management	O	Launch management for Kwaj campaign	WI	05/01/2006	
Engineering	G	Impact of induced loads from S1/S2 ignition events Initial CLA showed positive margins. Will continue to monitor throughout coupled loads cycles.	WI	09/01/2005	04/19/2008
Engineering	G	S/C performance requirements exceed current LV capability.	WI	10/01/2005	04/19/2008
Engineering	G	Mission unique requirements for spinning (58-60 rpm) separation, motorized lightband sep system, maximized vehicle performance, and triple component payload	WI	05/01/2006	4/19/2008

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## IBEX - Significant Events

### LAUNCH SERVICES PROGRAM

Accomplished	
IBEX MUPDR	09/20/2006-09/20/2006
IBEX CDR	09/12/2006-08/18/2006
MIWG#4/RWG#1 at Kwajalein	10/20/2006-10/27/2006
MUCDR	03/20/2007-03/20/2007
Mission Integration TIM	12/6/2006-12/6/2007
Preliminary Mission Analysis	05/16/2007-08/16/2007
MIWG #5/RWG#2 at VAFB	05/22/2007-05/23/2007
Delta MUCDR	08/29/2007-08/29/2007

Planned	
PDU Testing	12/06/2007-12/19/2007
Safety Working Group (SWG) Reconvene in Dulles	10/29/2007-10/29/2007
MLB Separation Test	12/19/2007-12/20/2007
GOWG at VAFB	01/15/2008-01/16/2008

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# IBEX Mission Management

John Calvert

## LAUNCH SERVICES PROGRAM

### Mission

### Launch Date

Orbit Requirement

### Launch Vehicle Class

### Launch Period Window

### PPF

Mass (kg)

PAD



### ICD

There are no signed SCNs

IBEX
2008/06/15
200km target circular, 11 deg
Pegasus
Determined by Arg. of Perig
1555
482.6
Kwajalein

Sep Oct Nov

G	G	G
---	---	---

There are no SCNs in Review

### Observatory Status

### Observatory Status

Schedule

Budget

Deliverables

Testing

ATLO

Instrument

Sep Oct Nov

G	G	G
Y	G	Y
G	G	G
G	G	G
G	G	G
0	0	0
G	G	G

### Launch Vehicle Status

### Integrated Schedule

CDRLs (S/C & LSC)

### Manifest/Range

Ground Stations

Deployables

P-3/OTTR

G	G	Y
G	G	G
Y	Y	Y
0	0	G
0	0	N/A
0	0	N/A

Mission Center:

Program:

PM

LVI

MM

IE

LSIM

PIM

MAM

MCE

MTE

GSFC

Explorers

G. Frazier (GSFC)  
Scherrer (SwRI)

Mark Phillips

John Calvert

John Battcher

Jeffrey Ehram

Ken Carr

Michael Johnson

Ralph Mikulas

Tuan Doan

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## IBEX - Engineering

John Battcher

### LAUNCH SERVICES PROGRAM

	Sep	Oct	Nov
<b>Launch Vehicle</b>	G	G	G
Payload Fairing	G	G	G
First Stage	G	G	G
Second Stage	G	G	G
Third Stage	G	G	G
Payload Attach Fitting	N/A	N/A	0
Other	N/A	N/A	0
<b>Mission Specific</b>	Y	Y	Y
<b>Certification</b>	N/A	N/A	0
<b>Mission Analysis</b>	G	G	G
ERS/ERB	G	G	G
Launch PAD/GSE	G	G	G
<b>Mission Unique IV&amp;V</b>	N/A	N/A	0

REQUIREMENT VERIFICATION STATUS	
NUMBER OF REQUIREMENTS	164
VERIFIED TO DATE	0

LAUNCH PAD / GSE MODS (IF APPLICABLE)
There are none.

MISSION UNIQUE STUDIES (IF APPLICABLE)
There are none.

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# IBEX - Mission ERB Status

John Battcher

## LAUNCH SERVICES PROGRAM

R/Y/G	ERS #	TITLE	ERB Req?		Board Held?			Closure		
			Y	N	Y	N	N/A	AI	ENG.	OCE
G	05-382	IBEX ICD Review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	06-067	Pegasus Mission Unique PDR for IBEX	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
G	05-292	Pegasus/IBEX Performance Enhancement Studies	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
G	06-368	Pegasus/IBEX Mission Unique CDR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-280	Pegasus - IBEX S&A Fairing Door	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-236	Pegasus IBEX Modified Avionics/Transient Li-Ion Battery System	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-202	IBEX Avionics PDU Mission Unique Modification	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-309	IBEX - Avionics Structure Interface Requirement	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-279	Pegasus/IBEX - Conax Isolation Valve (First Flight)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	06-47	IBEX Payload Isolation System	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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## IBEX - Vehicle ERB Status

John Battcher

### LAUNCH SERVICES PROGRAM

R/Y/G	ERS #	TITLE	ERB Req?		Board Held?			Closure		
			Y	N	Y	N	N/A	AI	ENG.	OCE
G	04-339	Pegasus - Fin Material Manufacturing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	06-68	Pegasus - Wing Roving Material	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	06-27	Pegasus FAS Motor Vendor Change (to MPC)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-270	Pegasus Fin-Pin Redesign	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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## IBEX - Launch Site

Jeffrey Ehram

## LAUNCH SERVICES PROGRAM

	Sep	Oct	Nov
<b>LSSP</b>	G	G	G

LSSP	Planned	Released
Preliminary	02/19/2007	06/15/07
Baseline	11/19/2007	

	Sep	Oct	Nov
<b>CUSTOMER INPUTS</b>	G	G	G

	Sep	Oct	Nov
<b>DELIVERABLES</b>			
Security and Badging	G	G	G
Training and Personnel Cert	G	G	G
Contingency Plans	G	G	G
Safety LSIM	G	G	G
Radiation Control	G	G	G
Operational Plans	G	G	G

## UNIQUE REQUIREMENTS

## LAUNCH SITE UNIQUE

Spin table not available at VAFB; Orbital to provide table from Dulles, VA

Contingency hydrazine support at RTS

Range Safety approval for spin balance

Sep	Oct	Nov
-----	-----	-----

Y	Y	Y
G	G	G
G	G	G
Y	Y	Y

## PPF

IBEX Principle Investigator requests a low cost PPF; considers commercial PPF cost excessive for SMEX mission; On 29 Nov 2006, IBEX delivered a formal concurrence to use a commercial PPF.

G	G	G
G	G	G

## Spacecraft OPS

G	G	G
---	---	---





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# IBEX Budget Breakdown

Ken Carr

## LAUNCH SERVICES PROGRAM

The launch service budget includes:

\* **Launch Services**

- Standard launch Vehicle Services provided by this contract. This line item is firm fixed price and has no flexibility.
- 

\* **Mission Uniques**

- Requirements necessary to customize basic vehicle hardware to meet unique s/c driven requirements.
- Other services directly attributable to the mission.

\* **Integrated Services**

- LSP contractor support service (ELVIS, CAPPs, JBOSC, KICs, etc).
- USAF range costs attributable to the mission
- Limited flexibility

\* **Payload Processing Facility**

- Government facility: spacecraft customers are required to be processed in a government facility if the mission is planetary or has nuclear requirements
- Commercial facility: all other missions have been directed to process in a commercial facility;
- Contains some budget flexibility. Additional spacecraft cleanliness requirements or hazardous requirements may increase PPF costs.

\* **Telemetry**

- Assets required to meet minimum launch vehicle telemetry requirements.
- Includes fixed and deployable ground stations, instrumented aircraft, and ocean assets.
- Limited flexibility requirements are often set late in the integration cycle.

\* **Fly Out**

- Costs that each mission in the 19-Pack must incur.
- Long lead material procurement to mitigate risks due to gaps in production and supplier orders.
- Post-production support for labor skill retention, procure, manufacture, store and maintain under configuration control, mission critical spare parts.
- Pad Sustainability costs for SLC-2 and SLC-17.
- No flexibility-contract costs

\* **Nuclear**

- RTG/RHU processing
- RTG/RHU databooks and approval
- Limited flexibility

\* **Reimbursable**

- Reimbursable FC for transportation, labor, and CMO.

\* **Mission Flexibility**

- Portion of the mission budget available for funding additional task assignments, non-standard services or meeting unexpected requirements.

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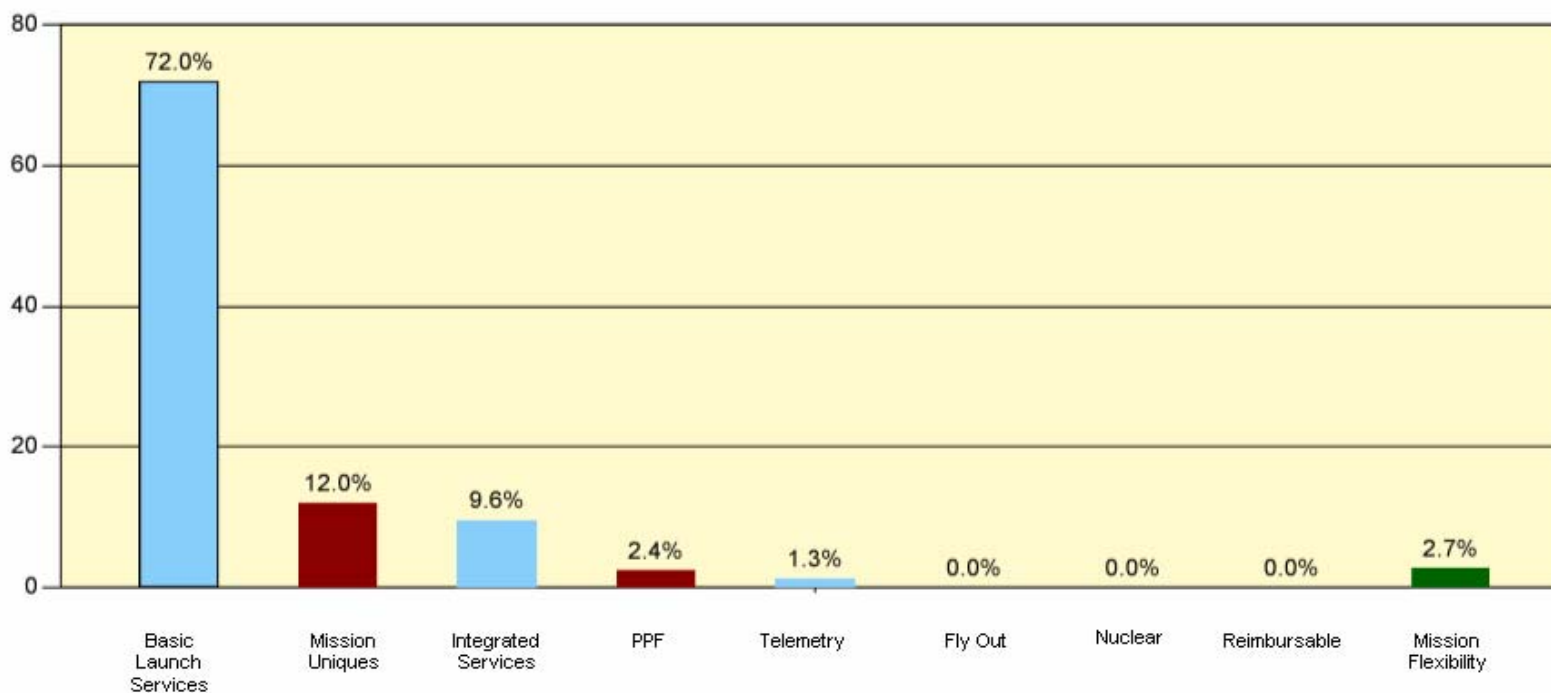
## Launch Services Budget Breakdown

### IBEX Mission

Ken Carr

#### LAUNCH SERVICES PROGRAM

% of Total Launch Service Cost - 11 / 2007



- No flexibility; cost are fixed
- Limited Flexibility depending on spacecraft requirements
- Flexible portion of budget

#### Notes:

Variance: PPF on contract reflects lower contract cost than original estimate which increased Mission Flexibility.

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## IBEX - Business

Ken Carr

### LAUNCH SERVICES PROGRAM

**Budget**

**Contracts**

Sep	Oct	Nov
G	G	G
G	G	G

Milestone	Date
Milestone 1A	11/1/03
Milestone 1B	9/1/04
Milestone 1C	11/1/04
Milestone 1D	1/1/05
Milestone 2A	9/15/05
Milestone 2B	12/15/05
Milestone 3	8/15/06
Milestone 4	3/15/07
Milestone 5	7/15/07
Milestone 6	1/15/08
Milestone 7	3/15/08
Milestone 8	5/15/08
Milestone 9	8/15/08

<input type="checkbox"/>	Open Milestone Payment
<input type="checkbox"/>	Paid Milestone

### Contract Status

Launch Services

Contract Mod	Number	Description
	Mod 11	Launch Delay from 8/15/07 to 6/15/08
	Mod 13	KWAJ launch site option
	Mod 13	Multiple Non-standard services
	Mod 25	Mission Unique Performance enhancements

There are no LD Contract Mods

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Task Assignments	Number	Description	Completion Date	Invoice Paid Date
	SP-23.001	Coupled Loads Analysis		
	SP-23.002	Separation Analysis		
	SP-23.003	Vehicle Enhancement Study		
	SP-23.004	Separation Analysis		
	SP-23.005	Trajectory & Controls Analysis		
	SP-23.006	Soft-Ride Feasibility Study		
	SP-23.007	Early System Safety Support		
	SP-23.008	RF Compatibility Analysis		
	SP-23.009	IBEX CDR support		
	SP-23.011	IBEX Performance Study - Low Altitude Target		
	SP-23.012	Battery Health Check		
	SP-23.013	PDU Testing		
	SP-23.014	ST 2005 Transmitter study		
	SP-23.015	RCS Venting		
	SP-23.016	Mass Dispersion Study		
There are no PPF Contract Mods				
There are no Other Contract Mods				
There are no Issues.				



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# IBEX - Safety and Mission Assurance

Michael Johnson

## LAUNCH SERVICES PROGRAM

Assurance Verification Areas	Status		Evidence of Completion			
	Complete	In Work		Sep	Oct	Nov
<b>Quality</b>				G	G	G
Software / Hardware Problems	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues at this time	G	G	G
Alerts	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues at this time.	G	G	G
Audits/Inspections/Surveillances	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues at this time.	G	G	G
Limited Life Items	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues at this time.	G	G	G
<b>Reliability</b>				G	G	G
FMEA	<input type="checkbox"/>	<input checked="" type="checkbox"/>	MU/FF items under review No FMEA/Fishbones/Equivalent have been identified	G	G	G
Reliability Assessments	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues at this time.	G	G	G
<b>Safety</b>				G	G	G
Requirements Definitions	<input type="checkbox"/>	<input checked="" type="checkbox"/>	In Work (Range Safety).	G	G	G
Range Safety & Mission Flight Rules	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Governing docs - 30th & Kwaj. O2J initiators under scrutiny - keeping an eye on usage.	G	G	G
Licenses/Use Authorizations	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues at this time.	G	G	G
Safety Documentation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	In Work - Tailor Safety doc for Kwaj launch	G	G	G
Non-compliances	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Waivers/Deviations/Exceptions	G	G	G
Contingency Planning	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Distribute prior to SARR	G	G	G
<b>Mission Assurance</b>				G	G	G
Lessons Learned	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues at this time.	G	G	G
First Flight/Mission Unique items	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues at this time	G	G	G
Test/Qualification/Certification	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues at this time	G	G	G
Mission Assurance Assessments	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues at this time	G	G	G
Risk Management	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Risk identification and surveillance sufficient for project at this time	G	G	G

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## IBEX Comm & Telemetry

Ralph Mikulas and Tuan Doan

LAUNCH SERVICES PROGRAM

### Communications

Voice Comm  
Data Comm  
Networks  
Video Comm  
Timing  
RF Comm  
LSSP Comm Annex

Sep Oct Nov

G	G	G
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G

### Telemetry

Decommuration Tables  
Data Integrity Test  
Software Lockdown  
Software Inventory  
Console Checkout  
Console Configuration

Sep Oct Nov

G	G	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0

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## LRO-LCROSS / LCROSS Project Summary

## LAUNCH SERVICES PROGRAM

Mission	LRO-LCROSS / LCROSS
Launch Date	2008/10/28
Launch Vehicle	Atlas V
Launch Period Window	0
PPF	ASO-KSC

	Sep	Oct	Nov
<b>OVERALL MISSION</b>	Y	Y	Y

MISSION MANAGEMENT

Observatory Status  
Manifest/Range  
Integrated Schedule  
ICD  
CDRLs (S/C & LSC)

Sep	Oct	Nov
G	G	G
G	G	G
G	G	G
Y	R	Y
G	G	Y

LAUNCH SITE

LSSP  
Customer Inputs  
PPF  
Launch Site Unique  
Spacecraft OPS

Sep	Oct	Nov
G	G	G
G	G	G
G	G	G
G	G	G
0	G	0

SAFETY & MISSION ASSURANCE

Mission Assurance  
Safety  
Quality  
Reliability

Sep	Oct	Nov
Y	Y	Y
G	G	Y
Y	Y	Y
G	G	G

ENGINEERING

Launch Vehicle  
Mission Specific  
Certification  
Mission Analysis  
ERS/ERB  
Launch PAD/GSE  
Mission Unique IV&V

Y	Y	Y
Y	Y	Y
N/A	N/A	N/A
Y	Y	Y
Y	R	Y
Y	Y	Y
N/A	G	G

COMM & TELEMETRY

Communications  
Telemetry

G	G	G
0	0	0

BUSINESS

Budget  
Contracts

G	G	G
G	G	G

LEGEND

Proceeding on Plan  
Area of Concern  
Significant Problem  
Not Evaluated  
Not Applicable

G
Y
R
0
N/A

DOWNRANGE TELEMETRY

Ground Stations  
Deployables  
P-3/OTTR

G	G	G
G	G	N/A
0	N/A	N/A

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# LCROSS Project Summary

## LAUNCH SERVICES PROGRAM

Mission	LCROSS
Launch Date	2008/10/28
Launch Vehicle	Atlas V
Launch Period Window	0
PPF	ASO-KSC

	Sep	Oct	Nov
<b>OVERALL MISSION</b>	Y	Y	0

### MISSION MANAGEMENT

	Sep	Oct	Nov
Observatory Status	G	G	G
Manifest/Range	G	G	G
Integrated Schedule	G	G	G
ICD	Y	R	R
CDRLs (S/C & LSC)	G	G	G

### LAUNCH SITE

	Sep	Oct	Nov
LSSP	G	G	G
Customer Inputs	G	G	G
PPF	G	G	G
Launch Site Unique	G	G	G
Spacecraft OPS	0	0	0

### SAFETY & MISSION ASSURANCE

	Sep	Oct	Nov
Mission Assurance	0	0	0
Safety	0	0	0
Quality	0	0	0
Reliability	0	0	0

### ENGINEERING

	Sep	Oct	Nov
Launch Vehicle	0	0	0
Mission Specific	0	0	0
Certification	0	0	0
Mission Analysis	0	0	0
ERS/ERB	0	0	0
Launch PAD/GSE	0	0	0
Mission Unique IV&V	0	0	0

### COMM & TELEMETRY

	Sep	Oct	Nov
Communications	G	G	G
Telemetry	0	0	0

### BUSINESS

	Sep	Oct	Nov
Budget	G	G	G
Contracts	G	G	G

### DOWNRANGE TELEMETRY

	Sep	Oct	Nov
Ground Stations	G	G	G
Deployables	N/A	N/A	0
P-3/OTTR	N/A	N/A	0

### LEGEND

Proceeding on Plan  
 Area of Concern  
 Significant Problem  
 Not Evaluated  
 Not Applicable

G
Y
R
0
N/A

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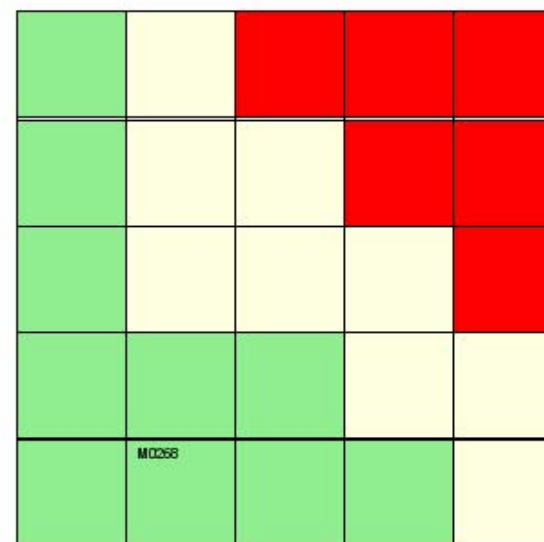
## LRO-LCROSS / LCROSS - Open/Accepted Risks

LAUNCH SERVICES PROGRAM

		Condition
RYG Trend	RiskID	Consequence
G	M0268	Condition: The LRO and LCROSS spacecraft have different risk classes (LRO-Class B and LCROSS-Class D) and as a result have different (dissimilar) test requirements. The loads model dynamic uncertainty factor (DUF) for the verification loads cycle for the combined spacecraft stack including launch vehicle elements will have to be agreed upon by four parties (LCROSS, LRO, ULA, and LSP).
		Consequence: May lead one party, in this case LRO, to accept more risk (higher DUF) than they would have if they were flying without LCROSS.

P  
R  
C  
B  
  
C  
F  
  
C  
C  
C  
U  
R  
R  
E  
N  
C  
E

5  
91-  
100%  
4  
51-90%  
3  
11-50%  
2  
6-  
10%  
1  
1-5%



1 2 3 4 5  
I M P A C T

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## LRO-LCROSS / LCROSS - Actions / Issues / Concerns

### LAUNCH SERVICES PROGRAM

There are no Actions.

Mission Summary Map	G/Y/R	ISSUES / CONCERNS	WI/ERS/Risk/Problem	Open Date	Due Date
Engineering	G	LRO contamination requirements imposed on the LV need to be allocated between LCROSS and LV unless external sources of contamination can be relaxed. LRO will coordinate directly with LCROSS with no additional measures imposed on the LV	WI	Jul 6 2006	12/12/2007
Engineering	Y	LRO contamination requirements are very strict (0.25% obscuration). Special VIF GSE (Clean enclosures) are in work for operational use for protect LRO.	WI	09/26/2006	01/01/2008
Mission Management	Y	Clarification of Mission Success Expectations and hand-off state between LSP and LCROSS. OCE needs clear understanding of LSP position on risk tolerance of LCROSS spacecraft to proceed with ERBs on long-duration components and so we can direct Atlas to perform or not perform qualification on Centaur and separation components as appropriate with mission risk tolerance.	WI/ERS	5/01/07	11/30/07
Engineering	G	Launch Vehicle issues that were being tracking as issues for SDO, will now be watch items for LRO-LCROSS since SDO launch is now NET Jan 2009.		8/14/07	8/01/08
Engineering	G	ICD Launch Window definition needs resolution by management. Wording agreed upon at MUPDR.	ERS 06-401	10/03/07	10/30/07

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## LRO-LCROSS / LCROSS - Significant Events

### LAUNCH SERVICES PROGRAM

Accomplished	
ATP Launch Services	8/17/2006
LRO Mission CDR	11/6/2006-11/9/2006
LCROSS Mission PDR	9/6/2006-9/8/2006
LCROSS Mission CDR	2/21-23/2007
LRO/LCROSS Requirements TIM	8/24/2006
LRO/LCROSS Kick-off MIWG	9/25/06-9/26/06
GOWG #1	11/28/2006-11/30/2006
LCROSS Confirmation Review	1/19/2007
LRO/LCROSS MURR	02/28/2007-02/28/2007
LV Mission Unique Requirements Review (MURR) complete	2/28/07-2/28/07
MIWG3/GOWG2/LV Mission Briefing to Range Safety	4/10/07-4/12/07
Early confidence testing of LRO TM, LCROSS discrete SIL, elec connectors pull test.	4/17/07-5/25/07
First round of CPWSR data released	5/25/07-6/21/07
MIWG 4 - Denver (ICD Release, and Avionics Splinter, EICD and MICD Review)	8/7/07-8/9/07
Received summary of white paper from LCROSS clarifying risk acceptance/tolerance (Class D.) Final White Paper received July 13, 2007.	6/22/07-7/15/07
LCROSS Electrical Connector Development test.	6/25/07-9/30/07
Preliminary CPWSR Data deliveries.	6/21/07-7/18/07
Final Loads Cycle Report Complete/Documented.	8/7/07-9/18/07

Planned	
Long duration Centaur contamination sources and residuals analysis. (White paint, abrasion overwrap, foam outgassing, residual water, & residual propellants)	4/01/07-12/05/07
MUPDR	11/06/07-11/07/07
MUCDR	3/01/08-5/02/08
GOWG 3 - KSC	1/9/08 (U/R)-1/10/08 (U/R)
Preliminary Release of LRO & LCROSS LSSPs.	10/30/07-11/30/07
ICD Baseline release (4 parties -Atlas, LSP, LRO, & LCROSS)	9/14/07-10/30/07
Commercial PPF contract (CLIN) in place for LRO and LCROSS processing.	10/30/07-11/3/07
MIWG #5 (GSFC)	12/11/2007-12/12/2007

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# LRO-LCROSS / LCROSS Mission Management

Charles Tatro

## LAUNCH SERVICES PROGRAM

### Mission

### Launch Date

Orbit Requirement

### Launch Vehicle Class

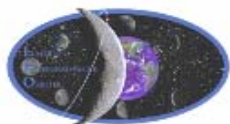
### Launch Period Window

### PPF

Mass (kg)

PAD

LRO-LCROSS / LCROSS
2008/10/28
Lunar Trajectory
Atlas V
0
ASO-KSC
2000 (LRO)
SLC 41



### ICD

Sep	Oct	Nov
Y	R	Y

There are no signed  
SCNs

There are no SCNs in  
Review

### Observatory Status

### Observatory Status

Schedule

Budget

Deliverables

Testing

ATLO

Instrument

Sep	Oct	Nov
G	G	G
G	G	Y
G	G	G
G	G	G
G	G	G
G	G	G

### Launch Vehicle Status

### Integrated Schedule

### CDRLs (S/C & LSC)

### Manifest/Range

Ground Stations

Deployables

P-3/OTTR

Sep	Oct	Nov
G	G	G
G	G	Y
G	G	G
G	G	G
G	G	N/A
0	N/A	N/A

Mission Center:

Program:

PM

LVI

MM

IE

LSIM

PIM

MAM

MCE

MTE

Other
LPRP, S/C Mgmt - GSFC & ARCs
Craig Tooley/ Dan Andrews
Tom Jones/ Mike Skidmore
Charles Tatro
Diana Calero
Tom Rucci
Randy Mizelle
Ken Hale
Marty Loughheed
Mike Patton

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# LCROSS Mission Management

Charles Tatro

## LAUNCH SERVICES PROGRAM

### Mission

### Launch Date

Orbit Requirement

### Launch Vehicle Class

### Launch Period Window

### PPF

Mass (kg)

PAD

LCROSS
2008/10/28
LGALRO
Atlas V
0
ASO-KSC
<100
SLC 41

### Observatory Status

### Observatory Status

Schedule

Budget

Deliverables

Testing

ATLO

Instrument

Sep	Oct	Nov
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G
0	0	0
G	G	G

Mission Center:

Program:

PM

LVI

MM

IE

LSIM

PIM

MAM

MCE

MTE

AMES
LPRP
Dan Andrews
M. Skidmore/Tom Luzod
Charles Tatro
Norman Beck, Jr.
Rex Engelhardt
Randy Mizelle
Ken Hale
Marty Lougheed
Mike Patton



### ICD

Sep Oct Nov

Y	R	R
---	---	---

There are no signed SCNs

There are no SCNs in Review

### Launch Vehicle Status

### Integrated Schedule

### CDRLs (S/C & LSC)

### Manifest/Range

Ground Stations

Deployables

P-3/OTTR

G	G	G
G	G	G
G	G	G
G	G	G
N/A	N/A	0
N/A	N/A	0

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# LRO-LCROSS / LCROSS - Engineering

Diana Calero

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## LAUNCH SERVICES PROGRAM

	Sep	Oct	Nov
<b>Launch Vehicle</b>	Y	Y	Y
Payload Fairing	G	G	G
First Stage	G	G	G
Second Stage	Y	G	G
Third Stage	N/A	N/A	N/A
Payload Attach Fitting	G	G	G
Other	Y	G	G
<b>Mission Specific</b>	Y	Y	Y
<b>Certification</b>	N/A	N/A	N/A
<b>Mission Analysis</b>	Y	Y	Y
<b>ERS/ERB</b>	Y	R	Y
<b>Launch PAD/GSE</b>	Y	Y	Y
<b>Mission Unique IV&amp;V</b>	N/A	G	G

REQUIREMENT VERIFICATION STATUS	
NUMBER OF REQUIREMENTS	177
VERIFIED TO DATE	0

LAUNCH PAD / GSE MODS (IF APPLICABLE)
LRO Clean Enclosure GSE

MISSION UNIQUE STUDIES (IF APPLICABLE)
Modal sensitivity analysis due to LCROSS SC modal uncertainty

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## LRO-LCROSS / LCROSS - Mission ERB Status

Diana Calero

### LAUNCH SERVICES PROGRAM

R/Y/G	ERS #	TITLE	ERB Req?		Board Held?			Closure		
			Y	N	Y	N	N/A	AI	ENG.	OCE
Y	ERS 06-401	LRO/LCROSS ICD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	ERS 06-397	LRO/LCROSS MURR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	ERS 06-398	LRO/LCROSS MUPDR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Y	ERS 06-399	LRO/LCROSS MUCDR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Y	ERS 06-400	LRO/LCROSS MPDR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-136	LCROSS Separation System Thermal. Sep System Test plan in work Environment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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## LRO-LCROSS / LCROSS - Vehicle ERB Status

Diana Calero

### LAUNCH SERVICES PROGRAM

R/Y/G	ERS #	TITLE	ERB Req?		Board Held?			Closure		
			Y	N	Y	N	N/A	AI	ENG.	OCE
G	ERS-05-196	Atlas V - Thermal Assessment and Redesign of Single Pneumatics Panel [long coast]	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	ERS-05-345	Centaur Large Helium Bottle (LHB) COPV	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Y	ERS-03-609 /ERS-06-305	Atlas V - Booster RP Tank / Atlas V RP Tank Long Term Redesign	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	ERS-06-21	AV-010 Post Flight Data Review (First Article)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Y	07-204	Centaur performance degradation for NRO mission	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Y	06-081	Atlas-V Data Investigation, AV-010-009 measurement booster pod exceedance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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# LRO-LCROSS / LCROSS - Launch Site

Tom Rucci

## LAUNCH SERVICES PROGRAM

	Sep	Oct	Nov
<b>LSSP</b>	G	G	G

LSSP	Planned	Released
Preliminary	9/30/2007	10/25/07
Baseline	3/27/2008	

	Sep	Oct	Nov
<b>CUSTOMER INPUTS</b>	G	G	G

	Sep	Oct	Nov
<b>DELIVERABLES</b>			
Security and Badging	G	G	Y
Training and Personnel Cert	G	G	G
Contingency Plans	G	G	G
Safety LSIM	G	G	G
Radiation Control	0	0	N/A
Operational Plans	G	G	G

## UNIQUE REQUIREMENTS

	Sep	Oct	Nov
<b>LAUNCH SITE UNIQUE</b>	G	G	G
KSC Fueling Service	G	G	G

	Sep	Oct	Nov
<b>PPF</b>	G	G	G
Commercial PPF Contract	G	G	G

	Sep	Oct	Nov
<b>Spacecraft OPS</b>	0	G	0

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# LCROSS - Launch Site

Rex Engelhardt

## LAUNCH SERVICES PROGRAM

	Sep	Oct	Nov
<b>LSSP</b>	G	G	G

LSSP	Planned	Released
Preliminary	09/30/2007	11/2/2007
Baseline	03/24/2008	

	Sep	Oct	Nov
<b>CUSTOMER INPUTS</b>	G	G	G

	Sep	Oct	Nov
<b>DELIVERABLES</b>			
Security and Badging	G	G	G
Training and Personnel Cert	G	G	G
Contingency Plans	G	G	G
Safety LSIM	G	G	Y
Radiation Control	N/A	N/A	0
Operational Plans	G	G	G

## UNIQUE REQUIREMENTS

	Sep	Oct	Nov
<b>LAUNCH SITE UNIQUE</b>	G	G	G
KSC Provided Fueling Service	G	G	G

	Sep	Oct	Nov
<b>PPF</b>	G	G	G
Commercial PPF Contract	G	G	G

	Sep	Oct	Nov
<b>Spacecraft OPS</b>	0	0	0

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## LRO-LCROSS / LCROSS Budget Breakdown

Randy Mizelle

### LAUNCH SERVICES PROGRAM

The launch service budget includes:

\* **Launch Services**

- Standard launch Vehicle Services provided by this contract. This line item is firm fixed price and has no flexibility.

\* **Mission Uniques**

- Requirements necessary to customize basic vehicle hardware to meet unique s/c driven requirements.
- Other services directly attributable to the mission.
- Contains some flexibility except when technical risk is affected. Spacecraft requirements are the cost driver.

\* **Integrated Services**

- LSP contractor support service (ELVIS, CAPPs, JBOSC, KICs, etc).
- USAF range costs attributable to the mission
- Limited flexibility

\* **Payload Processing Facility**

- Government facility: spacecraft customers are required to be processed in a government facility if the mission is planetary or has nuclear requirements
- Commercial facility: all other missions have been directed to process in a commercial facility;
- Contains some budget flexibility. Additional spacecraft cleanliness requirements or hazardous requirements may increase PPF costs.

\* **Telemetry**

- Assets required to meet minimum launch vehicle telemetry requirements.
- Includes fixed and deployable ground stations, instrumented aircraft, and ocean assets.
- Limited flexibility requirements are often set late in the integration cycle.

\* **Fly Out**

- Costs that each mission in the 19-Pack must incur.
- Long lead material procurement to mitigate risks due to gaps in production and supplier orders.
- Post-production support for labor skill retention, procure, manufacture, store and maintain under configuration control, mission critical spare parts.
- Pad Sustainability costs for SLC-2 and SLC-17.
- No flexibility-contract costs

\* **Nuclear**

- RTG/RHU processing
- RTG/RHU databooks and approval
- Limited flexibility

\* **Reimbursable**

- Reimbursable FC for transportation, labor, and CMO.

\* **Mission Flexibility**

- Portion of the mission budget available for funding additional task assignments, non-standard services or meeting unexpected requirements.

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# LCROSS Budget Breakdown

Randy Mizelle

## LAUNCH SERVICES PROGRAM

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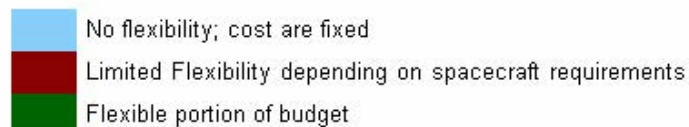
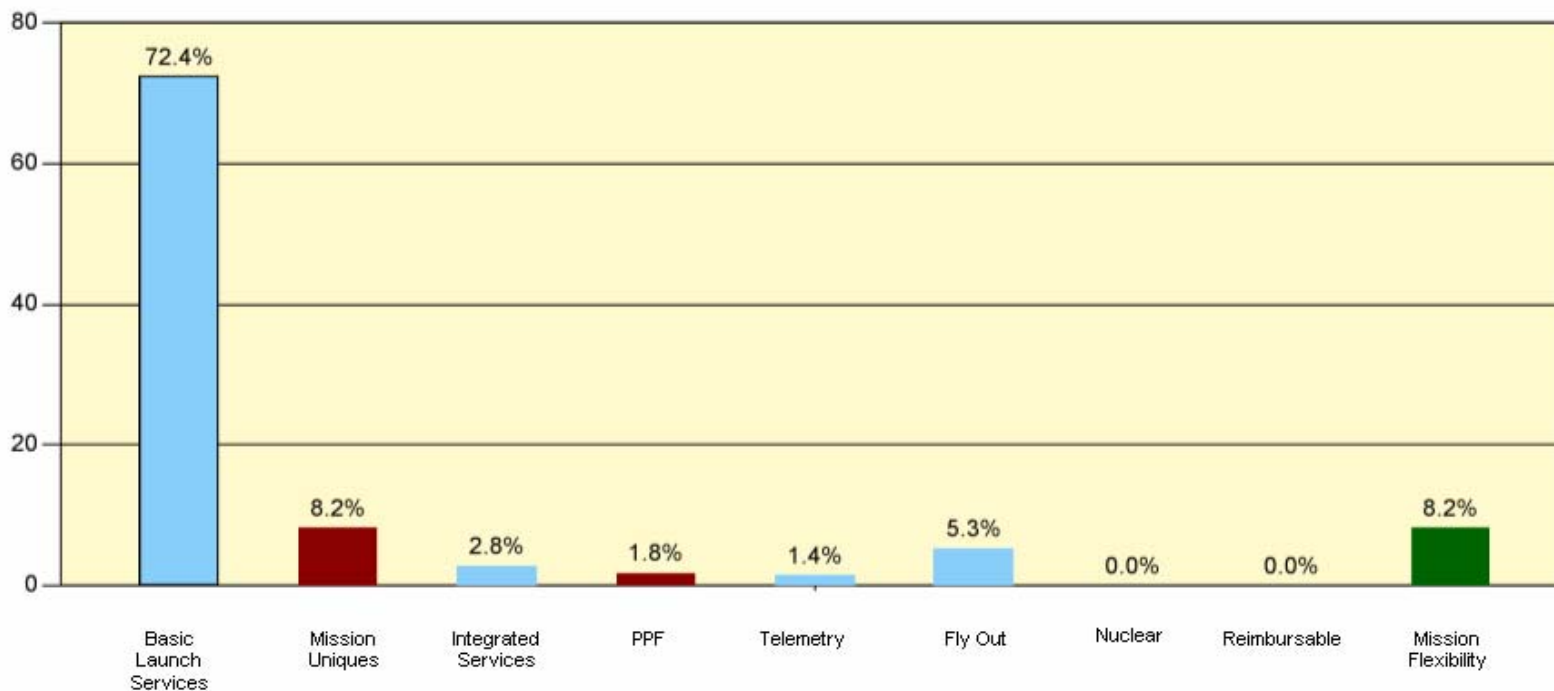
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## Launch Services Budget Breakdown LRO-LCROSS / LCROSS Mission

Randy Mizelle

### LAUNCH SERVICES PROGRAM

% of Total Launch Service Cost - 11 / 2007



#### Notes:

Percentages reflect LRO project only. LCROSS reported separately. Variance from April reporting is based on change of accounting methods for commercial Payload Processing Facility and Integrated Services costs, addition of a telemetry lien for GSFC Flight Dynamics Facility support and the removal of the lien to cover Delta II termination liabilities.

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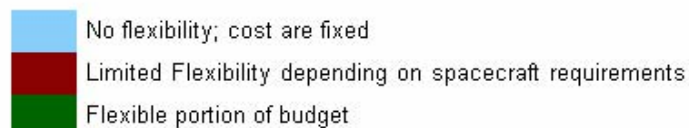
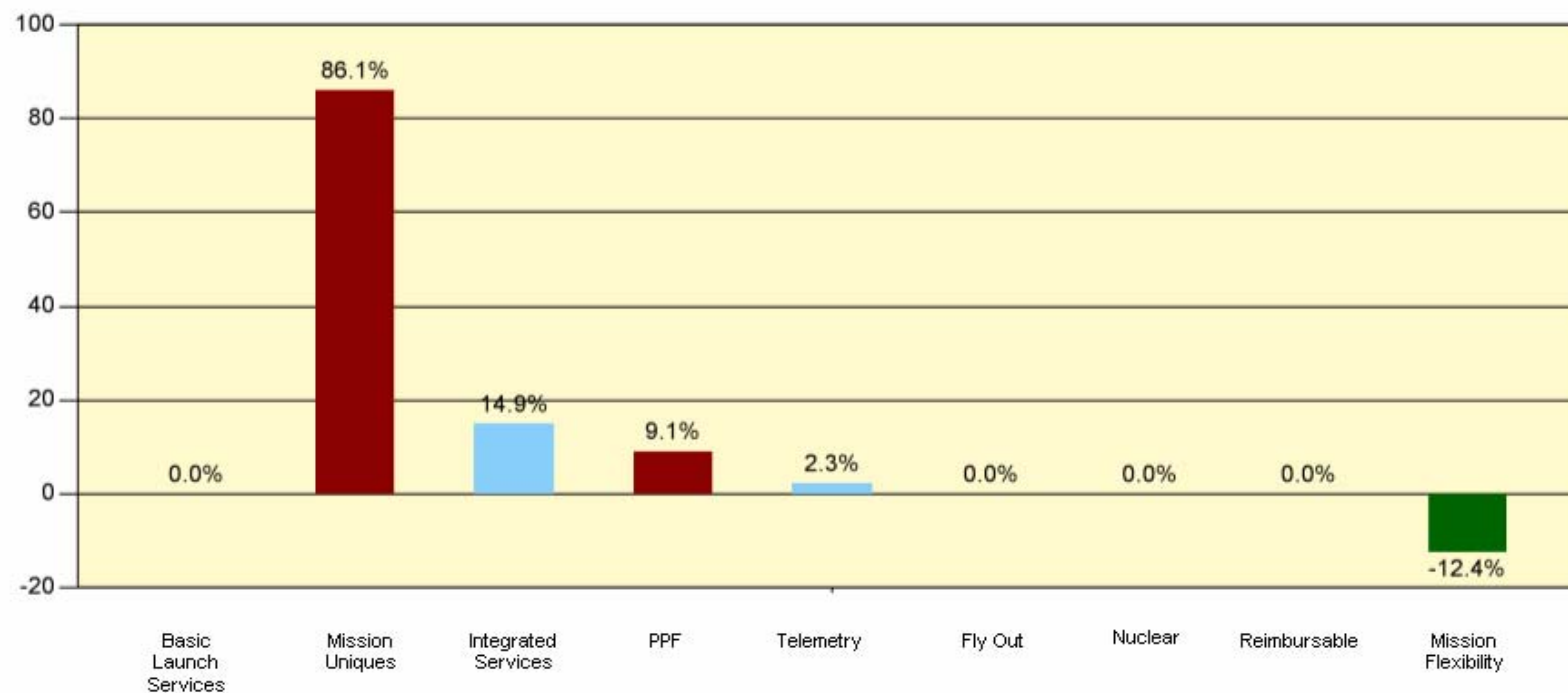
## Launch Services Budget Breakdown

### LCROSS Mission

Randy Mizelle

#### LAUNCH SERVICES PROGRAM

% of Total Launch Service Cost - 11 / 2007



#### Notes:

Percentages reflect LCROSS project only. LRO reported separately. Variance from April reporting results from a slight increase in Mission Uniques liens to cover projected outreach activities.

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## LRO-LCROSS / LCROSS - Business

Randy Mizelle

### LAUNCH SERVICES PROGRAM

**Budget**

**Contracts**

Sep	Oct	Nov
G	G	G
G	G	G

Milestone	Date
Milestone #1	8/17/06
Milestone #2	1/31/07
Milestone #3	4/20/07
Milestone #4	05/16/2007
Milestone #5	9/4/07
Milestone #6	10/31/07
Milestone #7	1/31/08
Milestone #8	4/30/08
Milestone #9	7/31/08
Milestone # 10	10/31/08

<input type="checkbox"/>	Open Milestone Payment
<input checked="" type="checkbox"/>	Paid Milestone

Contract Status		
Launch Services		
Contract Mod	Number	Description
	NLSB-226	Renamed CLIN 23 "TBD" from "LRO"
	NLSL-086	ATP Standard Service CLIN 8
	NLSL-092	ATP of MUS 4.0 - Enhanced PLA and PLF Cleaning
	NLSL-093	ATP of MUS 8.0a - Test PLA for S/C Testing
	NLSL-098	3% Volume Buy Discount Application
	NLSL-092	ATP of MUS 10.0 - SC Deposition
	NLSL-093	ATP OF MUS 8.0b - Support for S/C Testing
	NLSL-093	ATP of NSS 11.2a - Ultraviolet inspection
	NLSL-093	ATP of NSS 11.2d - Tape Cleaning of PLF

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Contract Mod	Number	Description		
	NLSL-086	ATP of NSS 2.1d - Large Payload Fairing (LPF)		
	NLSL-086	ATP of MUS 2.0 - Interleaved Telemetry		
	NLSL-086	ATP of MUS 3.0 - SC GN2 Grade C Purge		
	NLSL-086	ATP of MUS 5.0 - Real Time Video		
	NLSL-086	ATP of MUS 6.0 - Mission Unique Flight Design and Analyses		
	NLSL-086	ATP of NSS 11.1b - Molecular Contamination Monitoring		
	NLSL-086	ATP of NSS 11.2c - Particulate Fallout Monitoring		
	NLSL-106	Adjust launch window to 10/28/08 - 10/30/08		
There are no LD Contract Mods				
Task Assignments	Number	Description	Completion Date	Invoice Paid Date
	NLS-075	LCROSS Mission Requirements Update (Centaur Long Duration Study/Analysis)	05/31/2008	
	NLS-076	LCROSS SIL Testing	05/31/2007	06/08/2007
	NLS-077	LCROSS Electrical Connector Development Test (DET)	09/30/2007	10/01/2007
	NLSB-173	Nutation Time Constant Assessment	1/13/06	1/31/06
	NLSB-174	Early Mission Integration Support	11/30/06	1/31/06
	NLSB-189	DIV Launch Vehicle Models	3/6/06	3/20/06
	NLSL-067R2	E-Field Level Analysis and LV Compatibility for LRO S-band Transmission in the Fairing	10/31/2006	11/17/2006
	NLSL-085	Contamination Control Ground Support Equipment (GSE)	11/30/08	
There are no PPF Contract Mods				
There are no Other Contract Mods				
There are no Issues.				

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## LCROSS - Business

Randy Mizelle

### LAUNCH SERVICES PROGRAM

**Budget**

**Contracts**

Sep Oct Nov

G	G	G
G	G	G

Milestone

Date

☐

Open Milestone  
Payment

☐

Paid Milestone

### Contract Status

Launch Services

Contract Mod	Number	Description
	NLSL-086	ATP of Mission Unique Service (MUS) 11.0 for LCROSS
	NLSL-098	3% Volume Buy discount Application to MUS 11.0

There are no LD Contract Mods

Task Assignments	Number	Description	Completion Date	Invoice Paid Date
	NLSL-075	Mission Requirements Update	5/31/2008	
	NLSL-076	Software Integration Laboratory (SIL) Testing	05/31/2007	06/08/2007
	NLSL-077	Electrical Connector Development Test	09/30/2007	10/01/2007
	NLSL-084	Electrical Connector 7 Pin Qualification	03/15/2008	
	NLSL-085	Contamination Control Ground Support Equipment (GSE)	11/30/2008	

There are no PPF Contract Mods

There are no Other Contract Mods

There are no Issues.

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# LRO-LCROSS / LCROSS - Safety and Mission Assurance

Ken Hale

## LAUNCH SERVICES PROGRAM

Assurance Verification Areas	Status		Evidence of Completion	Sep	Oct	Nov
	Complete	In Work				
<b>Quality</b>				Y	Y	Y
Software / Hardware Problems	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Assessing justification for flying current RP-1 tank w/o stiffeners on 401 config, RD-180/RD-170 commonality from SeaLaunch failure, and weld inspections by unqualified inspector.	Y	Y	Y
Alerts	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues being tracked.	G	G	G
Audits/Inspections/Surveillances	<input type="checkbox"/>	<input checked="" type="checkbox"/>	LS SMA participated in Mission Success Reviews (MSR's) for the AV-020 Centaur Tank and Aft Transition Structure (ATS). No issues.	G	G	G
Limited Life Items	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues being tracked.	G	G	G
<b>Reliability</b>				G	G	G
FMEA	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues being tracked.	G	G	G
Reliability Assessments	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues being tracked.	G	G	G
<b>Safety</b>				G	G	Y
Requirements Definitions	<input type="checkbox"/>	<input checked="" type="checkbox"/>	LCROSS tailoring approved by Range. LRO tailoring under review by Range.	G	G	G
Range Safety & Mission Flight Rules	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Working with both Spacecrafts and Range on acceptance of tank welds. Working resolution of access to LRO S/C Fill & Drain valves for emergency offload.	G	G	G
Licenses/Use Authorizations	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues being tracked.	G	G	G
Safety Documentation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Yellow for LCROSS MSPSP. Only one submittal made with no monthly updates for the last 6 months.	G	G	Y
Non-compliances	<input type="checkbox"/>	<input checked="" type="checkbox"/>	None identified to date.	G	G	G
Contingency Planning	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Working to identify specific contingency and data impound responsibilities based on LCROSS handoff.	G	G	G
<b>Mission Assurance</b>				Y	Y	Y
Lessons Learned	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues being tracked.	G	G	G
First Flight/Mission Unique items	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Following resolution of access to LRO S/C Fill & Drain valves for emergency offload.	G	G	G

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Test/Qualification/Certification



Assessing justification for flying current RP-1 tank w/o stiffeners on 401 config., RD-180/RD-170 Commonality from SeaLaunch failure, and qualification of In-Flight Disconnects for LCROSS separation (Risk M0255).

Mission Assurance Assessments



Assessing justification for flying current RP-1 tank w/o stiffeners on 401 config and RD-180/RD-170 commonality from SeaLaunch failure.

Risk Management



No significant issues being tracked.

Y	Y	Y
Y	Y	Y
G	G	G





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## LRO-LCROSS / LCROSS Comm & Telemetry

Marty Loughheed and Mike Patton

LAUNCH SERVICES PROGRAM

### Communications

Voice Comm  
Data Comm  
Networks  
Video Comm  
Timing  
RF Comm  
LSSP Comm Annex

Sep Oct Nov

G	G	G
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G

### Telemetry

Decommuration Tables  
Data Integrity Test  
Software Lockdown  
Software Inventory  
Console Configuration  
Console Checkout

Sep Oct Nov

0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0

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## LCROSS Comm & Telemetry

Marty Loughheed and Mike Patton

LAUNCH SERVICES PROGRAM

### Communications

Voice Comm  
Data Comm  
Networks  
Video Comm  
Timing  
RF Comm  
LSSP Comm Annex

Sep Oct Nov

G	G	G
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G

### Telemetry

Decommuration Tables  
Data Integrity Test  
Software Lockdown  
Software Inventory  
Console Configuration  
Console Checkout

Sep Oct Nov

0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
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0	0	0

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# SDO Project Summary

## LAUNCH SERVICES PROGRAM

Mission	SDO
Launch Date	2008/12/01 (NET)
Launch Vehicle	Atlas V
Launch Period Window	
PPF	Commercial PPF

	Sep	Oct	Nov
<b>OVERALL MISSION</b>	G	G	0

### MISSION MANAGEMENT

	Sep	Oct	Nov
Observatory Status	G	G	0
Manifest/Range	Y	R	0
Integrated Schedule	G	G	0
ICD	G	G	0
CDRLs (S/C & LSC)	G	G	0

### LAUNCH SITE

	Sep	Oct	Nov
LSSP	G	G	G
Customer Inputs	G	G	G
PPF	G	G	G
Launch Site Unique	G	G	G
Spacecraft OPS	G	G	G

### SAFETY & MISSION ASSURANCE

	Sep	Oct	Nov
Mission Assurance	G	G	0
Safety	G	G	0
Quality	Y	Y	0
Reliability	G	G	0

### ENGINEERING

Launch Vehicle	G	G	Y
Mission Specific	G	G	G
Certification	N/A	N/A	N/A
Mission Analysis	G	G	G
ERS/ERB	G	G	G
Launch PAD/GSE	G	G	G
Mission Unique IV&V	N/A	N/A	N/A

### COMM & TELEMETRY

Communications	G	G	G
Telemetry	0	0	0

### BUSINESS

Budget	G	G	G
Contracts	G	G	G

### LEGEND

Proceeding on Plan  
 Area of Concern  
 Significant Problem  
 Not Evaluated  
 Not Applicable

G
Y
R
0
N/A

### DOWNRANGE TELEMETRY

Ground Stations	N/A	N/A	0
Deployables	N/A	N/A	0
P-3/OTTR	N/A	N/A	0

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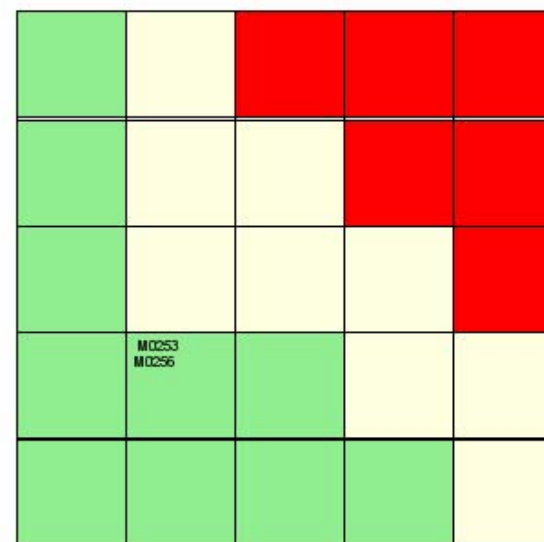
## SDO - Open/Accepted Risks

### LAUNCH SERVICES PROGRAM

		Condition
RYG Trend	RiskID	Consequence
G	M0253	Due to numerous TDRS / ground station comm and shadow constraints during flight and after SC separation leads to constrained trajectory solutions
		If launch does not occur before 18 Mar 09, next launch opportunity is 16 Jun 09 (91 days). Update: New targets being submitted which avoid the blackout dates.
Y	M0256	SDO EMI/EMC test levels are below those recommended by MIL-STD-461E. After system level testing is complete, there are no plans to disposition new sources added to the range.
		Range sources that go on line after SDO testing is complete must be mitigated or they may damage the SC instruments. The mitigation could lead to a delay in processing or an increase in LSP resources.

P  
R  
C  
B  
  
C  
F  
  
C  
C  
C  
U  
R  
R  
E  
N  
C  
E

5  
91-  
100%  
4  
51-90%  
3  
11-50%  
2  
6-  
10%  
1  
1-5%



1 2 3 4 5  
IMPACT

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## SDO - Actions / Issues / Concerns

### LAUNCH SERVICES PROGRAM

There are no Actions.

Mission Summary Map	G/Y/R	ISSUES / CONCERNS	WI/ERS/Risk/ Problem	Open Date	Due Date
Business	O	Tech Eval of EA from LM in PIO. MRO EA being worked first.	NA	04/04/05	Oct-06
Engineering	Y	GSFC uses GEVS for EMI/EMC specifications. It is being interpreted as only testing to *known* transmission sources. Thus the SC may end up being under-tested at low frequencies. SDO will not be testing to susceptibility levels, only performing the minimum of GEVS or known transmitters and relying on range mitigation.	Risk M0256	12 Oct 06	20 Dec 07
Engineering	G	SDO contamination "requirements" continue to expand. SDO requesting extensive verifications and real-time monitoring and alarms. Increased requests for fairing access at the VIF conflict with increased contamination requests. Update: Most issues resolved at 28 Mar MIWG. ICD has been signed, but several TA's need to be worked to resolve remaining issues.	WI	12 Oct 06	10 Dec 07
Engineering	G	Trajectory design has become very complicated. Shading and communications requirements continue to alter trajectory significantly. UPDATE - LSP has performed trajectory analysis and shown that large black out windows in fall (52 days) and spring (91 days) could be avoided with a different trajectory.	Risk 0253	28 Sep 06	5 Feb 08

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## SDO - Significant Events

### LAUNCH SERVICES PROGRAM

Accomplished	
Procurement/ ATP	29 Sep 04
SDO CDR @ GSFC	5 Apr 05-7 Apr 05
SDO Adapter to LMSSC Tooling Fitchcheck	12 Jan 06
Test PLA/SC Test unit fitchcheck @ GSFC	18 Jul 06
MIWG @ LM/Denver	24 Oct 06-25 Oct 06
GOWG @ Astrotech	11 Oct 06-12 Oct 06
Initial CPWSR delivered	10 Aug 06-7 Feb 07
MIWG/GOWG @ KSC	27 Mar 07-29 Mar 07
Baseline ICD signed	1 Dec 06-8 May 07
SC Propulsion Module Sine Vibe Test	15 Oct 07-17 Oct 07
MIWG @ GSFC	18 Sep 07-19 Sep 07

Planned	
TIM @ ASO	12/05/2007- 12/05/2007

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# SDO Mission Management

Ron Mueller

## LAUNCH SERVICES PROGRAM

### Mission

### Launch Date

Orbit Requirement

### Launch Vehicle Class

### Launch Period Window

### PPF

Mass (kg)

PAD

SDO
2008/12/01 (NET)
GTO
Atlas V
Commercial PPF
3200 Kg
SLC 41

### Observatory Status

### Observatory Status

Schedule

Budget

Deliverables

Testing

ATLO

Instrument

Sep	Oct	Nov
G	G	0
Y	Y	0
G	G	G
G	G	0
G	G	0
G	G	0
Y	G	0

Mission Center:

Program:

PM

LVI

MM

IE

LSIM

PIM

MAM

MCE

MTE

GSFC
Living With a Star
Liz Citrin
Kevin Hughes
Ron Mueller
Eric Poole
Dianna Lampert
Benjamin Studenski
Craig Schreiber
Robert McEntire
Marty Loughheed



### ICD

Sep	Oct	Nov
G	G	0

### Launch Vehicle Status

### Integrated Schedule

### CDRLs (S/C & LSC)

### Manifest/Range

Ground Stations

Deployables

P-3/OTTR

Sep	Oct	Nov
G	G	0
G	G	0
Y	R	0
N/A	N/A	0
N/A	N/A	0
N/A	N/A	0

SIGNED SCNS:		SCNS IN REVIEW	
SCN #	DATE SIGNED	SCN #	DATE SIGNED
ICD initial release	05/08/2007	002	
		003	
001 (3.4 Flt Design)	08/09/2007		
004 (3.3.1.1 SC Thermal)	08/09/2007		

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## SDO - Engineering

Eric Poole

### LAUNCH SERVICES PROGRAM

	Sep	Oct	Nov
<b>Launch Vehicle</b>	G	G	Y
Payload Fairing	G	G	G
First Stage	G	G	G
Second Stage	G	G	Y
Third Stage	N/A	N/A	N/A
Payload Attach Fitting	G	G	G
Other	G	G	G
<b>Mission Specific</b>	G	G	G
<b>Certification</b>	N/A	N/A	N/A
<b>Mission Analysis</b>	G	G	G
<b>ERS/ERB</b>	G	G	G
<b>Launch PAD/GSE</b>	G	G	G
<b>Mission Unique IV&amp;V</b>	N/A	N/A	N/A

REQUIREMENT VERIFICATION STATUS	
NUMBER OF REQUIREMENTS	0
VERIFIED TO DATE	0

LAUNCH PAD / GSE MODS (IF APPLICABLE)
Drag on cooling required. TBD cart capabilities (cleanliness, pwr, elec, cooling)

MISSION UNIQUE STUDIES (IF APPLICABLE)
There are none.

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## SDO - Mission ERB Status

Eric Poole

### LAUNCH SERVICES PROGRAM

R/Y/G	ERS #	TITLE	ERB Req?		Board Held?			Closure		
			Y	N	Y	N	N/A	AI	ENG.	OCE
G	ERS-06-182	SDO - First use of D1666 Payload Separation System on Atlas V	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	ERS-06-335	SDO Solar Array Deployment Immediately at Separation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	ERS-06-378	Solar Dynamics Observatory (SDO) ICD Review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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## SDO - Vehicle ERB Status

Eric Poole

### LAUNCH SERVICES PROGRAM

R/Y/G	ERS #	TITLE	ERB Req?		Board Held?			Closure		
			Y	N	Y	N	N/A	AI	ENG.	OCE
G	ERS-05-345	Centaur Large Helium Bottle (LHB) COPV	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	ERS-05-196	Atlas V - Thermal Assessment and Redesign of Single Pneumatics Panel [long coast]	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	ERS-06-21	AV-010 Post Flight Data Review (First Article)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	ERS-06-305	Atlas V - Booster RP Tank / Atlas V RP Tank Long Term Redesign	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Y	07-204	AV009 Centaur Performance Evaluation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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## SDO - Launch Site

Dianna Lampert

### LAUNCH SERVICES PROGRAM

	Sep	Oct	Nov
<b>LSSP</b>	G	G	G

LSSP	Planned	Released
Preliminary	03/27/2007	4/2007
Baseline	02/15/2008	

	Sep	Oct	Nov
<b>CUSTOMER INPUTS</b>	G	G	G

	Sep	Oct	Nov
<b>DELIVERABLES</b>			
Security and Badging	G	G	G
Training and Personnel Cert	G	G	G
Contingency Plans	G	G	G
Safety LSIM	G	G	G
Radiation Control	N/A	N/A	N/A
Operational Plans	G	G	G

### UNIQUE REQUIREMENTS

	Sep	Oct	Nov
<b>LAUNCH SITE UNIQUE</b>	G	G	G

<b>PPF</b>	G	G	G
Astrotech	G	G	G
10K Clean Room	G	G	G

<b>Spacecraft OPS</b>	G	G	G
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# SDO Budget Breakdown

Benjamin Studenski

## LAUNCH SERVICES PROGRAM

The launch service budget includes:

\* **Launch Services**

- Standard launch Vehicle Services provided by this contract. This line item is firm fixed price and has no flexibility.

\* **Mission Uniques**

- Requirements necessary to customize basic vehicle hardware to meet unique s/c driven requirements.
- Other services directly attributable to the mission.
- Contains some flexibility except when technical risk is affected. Spacecraft requirements are the cost driver.

\* **Integrated Services**

- LSP contractor support service (ELVIS, CAPPs, JBOSC, KICs, etc).
- USAF range costs attributable to the mission
- Limited flexibility

\* **Payload Processing Facility**

- Government facility: spacecraft customers are required to be processed in a government facility if the mission is planetary or has nuclear requirements
- Commercial facility: all other missions have been directed to process in a commercial facility;
- Contains some budget flexibility. Additional spacecraft cleanliness requirements or hazardous requirements may increase PPF costs.

\* **Telemetry**

- Assets required to meet minimum launch vehicle telemetry requirements.
- Includes fixed and deployable ground stations, instrumented aircraft, and ocean assets.
- Limited flexibility requirements are often set late in the integration cycle.

\* **Fly Out**

- Costs that each mission in the 19-Pack must incur.
- Long lead material procurement to mitigate risks due to gaps in production and supplier orders.
- Post-production support for labor skill retention, procure, manufacture, store and maintain under configuration control, mission critical spare parts.
- Pad Sustainability costs for SLC-2 and SLC-17.
- No flexibility-contract costs

\* **Nuclear**

- RTG/RHU processing
- RTG/RHU databooks and approval
- Limited flexibility

\* **Reimbursable**

- Reimbursable FC for transportation, labor, and CMO.

\* **Mission Flexibility**

- Portion of the mission budget available for funding additional task assignments, non-standard services or meeting unexpected requirements.

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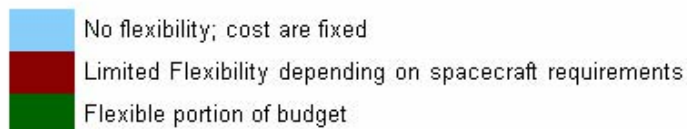
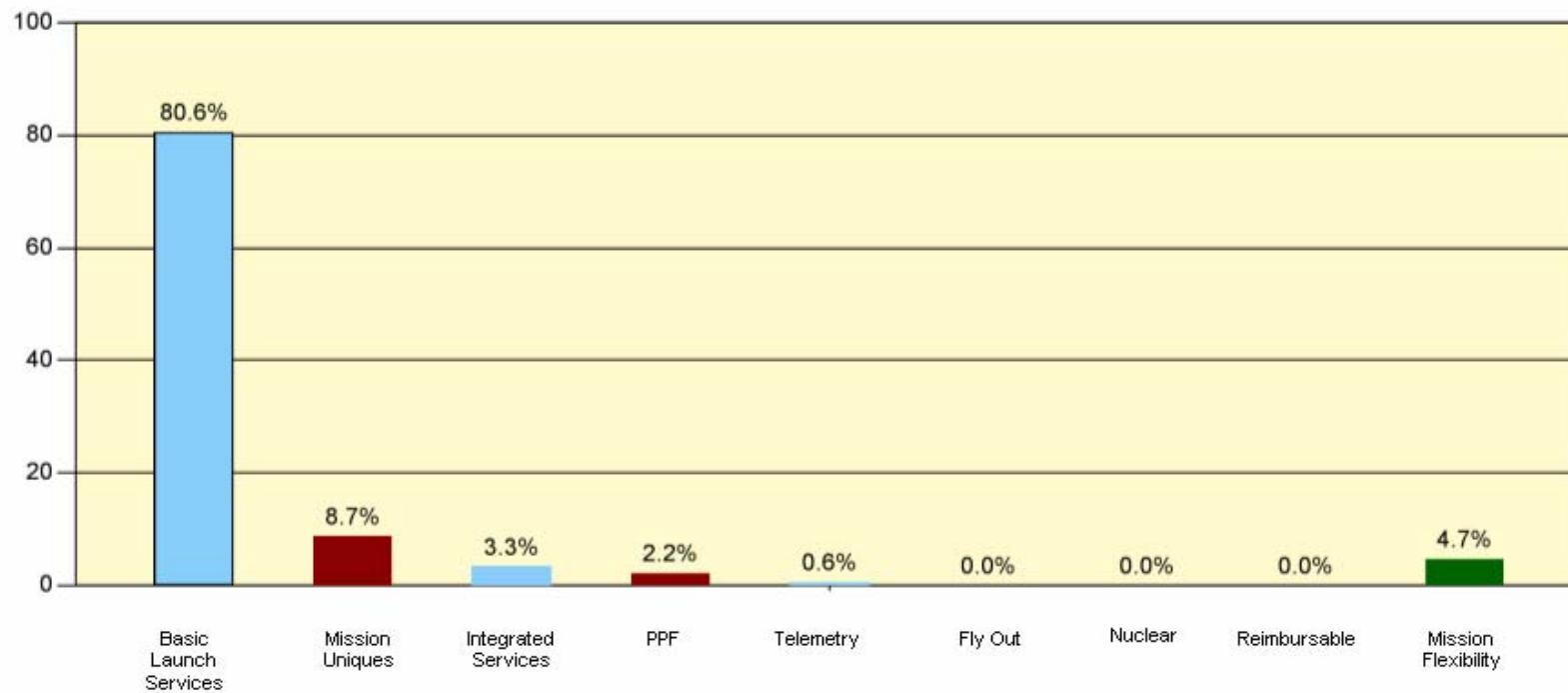
## Launch Services Budget Breakdown

### SDO Mission

Benjamin Studenski

#### LAUNCH SERVICES PROGRAM

% of Total Launch Service Cost - 11 / 2007



Notes:

Variance: Open Equitable Adjustment claim for delay to 8/1/2008.

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## SDO - Business

Benjamin Studenski

### LAUNCH SERVICES PROGRAM

**Budget**

**Contracts**

Sep	Oct	Nov
G	G	G
G	G	G

Milestone	Date
Milestone 1A	09/29/04
Milestone 1B	03/15/05
Milestone 1C	11/15/05
Milestone #2	05/01/06
Milestone #3	08/01/06
Milestone #4	11/01/06
Milestone #5	02/01/07
Milestone #6	05/01/07
Milestone #7	08/01/07
Milestone #8	11/1/2007
Milestone #9	6/1/2008
Milestone: #10	9/1/2008
Milestone: #11	12/1/2008

<input type="checkbox"/>	Open Milestone Payment
<input type="checkbox"/>	Paid Milestone

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Contract Status				
Launch Services				
Contract Mod	Number	Description		
	067	Change SDO Launch date to NET 8/1/2008		
	999	Change SDO Launch Date to 12/1/2008		
There are no LD Contract Mods				
Task Assignments	Number	Description	Completion Date	Invoice Paid Date
	028	Coupled Load Analysis (CLA) Report	09/14/2004	10/28/2004
	066	SDO Trajectory Optimization	10/06/06	11/17/2006
There are no PPF Contract Mods				
There are no Other Contract Mods				
	Issues			
G	Equitable adjustment amount being negotiated for launch delay to NET 8/1/2008			



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## SDO - Safety and Mission Assurance

Craig Schreiber

### LAUNCH SERVICES PROGRAM

Assurance Verification Areas	Status		Evidence of Completion			
	Complete	In Work		Sep	Oct	Nov
<b>Quality</b>				Y	Y	0
Software / Hardware Problems	<input type="checkbox"/>	<input checked="" type="checkbox"/>	RP-1 Tank Qual - Indications are that a fully qualified tank (suitable for 551) will be flown for SDO, therefore Quality rates this yellow pending satisfactory results.	Y	Y	0
Alerts	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No Activity	G	G	0
Audits/Inspections/Surveillances	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No Activity	G	G	0
Limited Life Items	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No Activity	G	G	0
<b>Reliability</b>				G	G	0
FMEA/Fishbones/Equivalent	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No Activity	G	G	0
Reliability Assessments	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Reliability data gathering in work	G	G	0
<b>Safety</b>				G	G	0
Requirements Definitions	<input type="checkbox"/>	<input checked="" type="checkbox"/>	EWR 127-1 Tailoring In Work	G	G	0
Range Safety & Mission Flight Rules	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No activity	G	G	0
Licenses/Use Authorizations	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No activity	G	G	0
Safety Documentation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No activity	G	G	0
Non-compliances	<input type="checkbox"/>	<input checked="" type="checkbox"/>	None identified to date	G	G	0
Contingency Planning	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Deliver by SARR	G	G	0
<b>Mission Assurance</b>				G	G	0
Lessons Learned	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No activity	G	G	0
First Flight/Mission Unique Items	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No activity	G	G	0
Test/Qualification/Certification	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No activity	G	G	0
Mission Assurance Assessments	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No activity	G	G	0
Risk Management	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues	G	G	0

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## SDO Comm & Telemetry

Robert McEntire and Marty Loughheed

LAUNCH SERVICES PROGRAM

### Communications

Voice Comm  
Data Comm  
Networks  
Video Comm  
Timing  
RF Comm  
LSSP Comm Annex

Sep Oct Nov

G	G	G
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G

### Telemetry

Decommuration Tables  
Data Integrity Test  
Software Lockdown  
Software Inventory  
Console Configuration  
Console Checkout

Sep Oct Nov

0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0

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# GLAST Project Summary

## LAUNCH SERVICES PROGRAM

Mission	GLAST
Launch Date	2008/02/05
Launch Vehicle	Delta II
Launch Period Window	Day to Day 45 min of sunlight after S/C separation
PPF	ASO-KSC

### OVERALL MISSION

Sep	Oct	Nov
Y	Y	Y

### MISSION MANAGEMENT

Observatory Status  
Manifest/Range  
Integrated Schedule  
ICD  
CDRLs (S/C & LSC)

Sep	Oct	Nov
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G

### LAUNCH SITE

LSSP  
Customer Inputs  
PPF  
Launch Site Unique  
Spacecraft OPS

Sep	Oct	Nov
0	G	G
0	G	G
0	G	G
0	G	G
0	Y	Y

### SAFETY & MISSION ASSURANCE

Mission Assurance  
Safety  
Quality  
Reliability

Sep	Oct	Nov
Y	G	Y
G	G	G
Y	Y	Y
G	G	G

### ENGINEERING

Launch Vehicle  
Mission Specific  
Certification  
Mission Analysis  
ERS/ERB  
Launch PAD/GSE  
Mission Unique IV&V

Y	Y	Y
G	G	G
N/A	N/A	N/A
Y	Y	Y
G	Y	Y
G	G	G
G	G	G

### COMM & TELEMETRY

Communications  
Telemetry

G	G	G
0	0	0

### BUSINESS

Budget  
Contracts

G	G	G
G	G	G

### LEGEND

Proceeding on Plan  
Area of Concern  
Significant Problem  
Not Evaluated  
Not Applicable

G
Y
R
0
N/A

### DOWNRANGE TELEMETRY

Ground Stations  
Deployables  
P-3/OTTR

0	0	0
0	0	0
0	0	0

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# GLAST - Open/Accepted Risks

## LAUNCH SERVICES PROGRAM

		Condition
RYG Trend	RiskID	Consequence
Y	M0236	GLAST Type 1 Analysis DCR delayed to L-4 months (initially). Current DCR date is TBD; current launch date 0529/08.
		Minimal schedule time to mitigate any issues should they be found.
G	M0245	There is a short turnaround time between the DAWN DIIH post flight data review and the GLAST DIIH PreVOS.
		Open technical issues or incomplete post flight data review, impacting launch readiness and major review schedules.
O	V0032	The first 3 flights of the Delta 792X Heavy Vehicle resulted in unexpected behavior during transonic flight.
		Delay in launch date due to incomplete anomaly investigation.
O	V0046	ULA does not perform an inspection for microscopic cracks before providing a spacecraft customer with a TPAF.
		Propagation of a micro crack in the TPAF during shock or vibe testing could cause damage to the spacecraft.
O	V0047	Failure analysis of a PacSci detonator that failed service life extension testing uncovered a vulnerability in which detonators could be reworked and inadvertently returned to production without the correct load.
		Failure to initiate FTS destruct ordnance chain on command.

P  
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E

5  
91-100%  
4  
51-90%  
3  
11-50%  
2  
6-10%  
1  
1-5%



1 2 3 4 5

IMPACT

0	V0050	DAWN experienced a significant delay very late in the hardware production process that delayed the launch readiness date. The same contributing causes exist for other NASA missions.
		Possible delay of other NASA missions.
0	V0015 (A)	Nine flight critical engine section components are unqualified for the newly revised P95/50 MEFL MECO transient environment.
		Loss of mission (worst case).
0	V0033 (A)	Cracks have occurred and been detected within Electronics-Package Thick Film Assemblies.
		Undetected cracks in other E-Packages causing failure.
0	V0034 (A)	Delaminations have occurred within the Graphite Epoxy Motor (GEM) nozzles' Exit Cone Liners (ECL) and Throat Support Insulators (TSI).
		Detrimental hot gas flow, adverse heating and eventual failure of the nozzle.
0	V0035 (A)	A photodiode failed within RIFCA S/N 20093.
		Failure of photodiode in flight causing loss of one lane in RIFCA.
0	V0053 (A)	All solid-nickel cased discrete semiconductors (transistors and diodes in a TO-XX can) are suspect to have conductive nickel flakes as a consequence of the forming process used to manufacture the cans.
		Loss of mission.
0	V0052 (A)	LS SMA has noted human error and process issues that indicate that Boeing's Quality Management System Corrective Actions are not preventing re-occurrence.
		The re-occurrence of undetected human errors and process problems can lead to major damage or loss of flight hardware or GSE.
0	P0018	Traditional DMCO testing on DII vehicles will be eliminated.
		Elimination of DMCO testing will not allow for capturing hardware failures off-pad, and thus introduce potential for on pad schedule delays.

0	P0019	USAF must fly out 5 Delta II GPS by end of FY 2008.
		Possible shifts in NASA FPB manifest dates for missions affected.



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## GLAST - Actions / Issues / Concerns

### LAUNCH SERVICES PROGRAM

There are no Actions.

Mission Summary Map	G/Y/R	ISSUES / CONCERNS	WI/ERS/Risk/ Problem	Open Date	Due Date
Engineering	Y	First DII 7920H-10C ER, Type 1 analysis required - DCR has slipped to TBD due to inclusion of DAWN SI review and autopilot design. Current launch date is 5/29/08	ERS-05-286 (M0236)	8/8/2005	01/31/2008
Engineering	G	S/C power on at launch - T-0 battery cooling to be implemented. Testing done to quantify leakage at miniskirt interface completed. No leakage encountered, detailed installation procedures to be implemented.	ERS-06-124	4/17/2006	12/6/2007
Engineering	G	2nd Stage Tank Leaks - Themis	ERS-06-284	08/04/2006	11/30/2007
Engineering	G	MECO Assessment-Plan reviewed and accepted by LSP - awaiting S/C testing results	ERS-05-137	4/19/05	12/31/2007
Engineering	G	Dawn Heavy post flight review will be conducted within weeks of GLAST launch.	M0245	11/27/06	11/30/2007
Engineering	G	The first 3 flights of the Delta 792X Heavy Vehicle resulted in unexpected behavior during transonic flight.	V0032	03/13/2007	11/30/2007
Engineering	G	Failure analysis of a PacSci detonator that failed service life extension testing uncovered a vulnerability in which detonators could be reworked and inadvertently returned to production without the correct load.	V0047	03/13/2007	11/30/2007
Engineering	G	DAWN experienced a launch delay due to late shipment of hardware from Decatur. GLAST S2 Decatur ship date is currently end of November 07 for a launch date of 05/29/08.	V0050	04/18/2007	11/30/2007
Engineering	G	LS SMA has noted human error and process issues that indicate that Boeing's Quality Management System Corrective Actions are not preventing re-occurrence.	V0052	05/23/2007	08/15/2008

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## GLAST - Significant Events

### LAUNCH SERVICES PROGRAM

Accomplished	
ATP	9/12/05
PSWG/GOWG	10/17/05-10/19/05
GOWG #3	4/18/06
MIWG #5	4/19/06
ICD Baseline	5/5/06
MIWG #6	9/20/06
TFA	02/21/2006
PMA	10/06/2006
GOWG #4	04/04/2007
ICD Revision "A" Release	05/02/2007
Spacecraft Fitchcheck	09/25/2007
T-0 Battery Cooling ERB	04/12/2007
ICD ERB	04/13/2007
Pre-Environmental Review	04/11/2007-04/12/2007
DTO Trajectory Analysis	04/02/2007-07/25/2007
MIWG #7	04/19/2007
MIWG #8 at Denver	08/15/2007
Spacecraft Shock Test	10/03/2007-10/05/2007
Spacecraft Sine Vibe/Acoustic	09/17/2007-10/01/2007
GOWG #5	10/23/2007-10/24/2007

Planned	
Type I DCR	TBD
MAR	02/08
SC Pre-Ship Review (To NRL Facility)	11/13/2007-11/14/2007

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# GLAST Mission Management

Bruce Reid

## LAUNCH SERVICES PROGRAM

### Mission

### Launch Date

Orbit Requirement

### Launch Vehicle Class

### Launch Period Window

### PPF

Mass (kg)

PAD



ICD

GLAST
2008/02/05
565 km Circ 28.5 deg
Delta II
Day to Day 45 min of sunlight after S/C separation
ASO-KSC
NTE 4627
SLC-17 B

### Observatory Status

### Observatory Status

Schedule

Budget

Deliverables

Testing

ATLO

Instrument

Sep Oct Nov

G	G	G
Y	Y	Y
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G

### Launch Vehicle Status

### Integrated Schedule

### CDRLs (S/C & LSC)

### Manifest/Range

Ground Stations

Deployables

P-3/OTTR

G	G	G
G	G	G
G	G	G
0	0	0
0	0	0
0	0	0

Mission Center:

Program:

PM

LVI

MM

IE

LSIM

PIM

MAM

MCE

MTE

GSFC

SEU

K. Grady

M. Goeser

Bruce Reid

Diana Calero

Tom Rucci

Benjamin Studenski

Bob Henry

Marty Loughheed

Nathan Wood

Sep Oct Nov

G	G	G
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SIGNED SCNS:		SCNS IN REVIEW	
SCN #	DATE SIGNED	SCN #	DATE SIGNED
3d1	10/31/2006	16d4	
7d2	01/04/2007	11d1	
8d1	09/29/2006	24d1	
9d1	10/31/2006		
10d1	10/31/2006		
1d4	03/02/2007		
4d3	02/15/2007		
2d3	01/04/2007		
13d1	02/15/2007		
14d3	03/02/2007		
15d2	03/02/2007		
12d4	03/27/2007		
5d1	04/19/2007		
20d1	06/22/2007		
17d5	06/11/2007		
18d1	07/19/2007		
22d1	08/13/2007		
21d1	09/11/2007		
23d1	09/11/2007		
25d1	09/11/2007		

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# GLAST - Engineering

Diana Calero

## LAUNCH SERVICES PROGRAM

	Sep	Oct	Nov
<b>Launch Vehicle</b>	Y	Y	Y
Payload Fairing	G	G	G
First Stage	Y	Y	Y
Second Stage	Y	Y	G
Third Stage	N/A	N/A	N/A
Payload Attach Fitting	G	G	G
Other	G	G	G
<b>Mission Specific</b>	G	G	G
<b>Certification</b>	N/A	N/A	N/A
<b>Mission Analysis</b>	Y	Y	Y
ERS/ERB	G	Y	Y
<b>Launch PAD/GSE</b>	G	G	G
<b>Mission Unique IV&amp;V</b>	G	G	G

REQUIREMENT VERIFICATION STATUS	
NUMBER OF REQUIREMENTS	89
VERIFIED TO DATE	6

LAUNCH PAD / GSE MODS (IF APPLICABLE)
Directed battery cooling design/modifications

MISSION UNIQUE STUDIES (IF APPLICABLE)
There are none.

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## GLAST - Mission ERB Status

Diana Calero

### LAUNCH SERVICES PROGRAM

R/Y/G	ERS #	TITLE	ERB Req?		Board Held?			Closure		
			Y	N	Y	N	N/A	AI	ENG.	OCE
G	05-137	GLAST MECO Assessment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Y	05-286	Delta 7920H-10C ER Type 1 Analysis	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	06-086	GLAST Mission ICD Review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	06-124	GLAST T-0 Battery AC System	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-54	GLAST Special Instrumentation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	04-152	STSS/PACS Prelaunch Cooling	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-122	GLAST Hardware Reviews	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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## GLAST - Vehicle ERB Status

Diana Calero

### LAUNCH SERVICES PROGRAM

R/Y/G	ERS #	TITLE	ERB Req?		Board Held?			Closure		
			Y	N	Y	N	N/A	AI	ENG.	OCE
Y	04-474	792X Transonic Observation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	05-378	Delta II, RS-27 Engine -51 Hoop/Band Separation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
G	06-284	Delta II 2nd Stage Tanks	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-53	DMCO On-Pad Initiative	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-194	Loose Backshell Adapter Saddle Clamps on Delta II Wire Harness	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-278	High MECO shock on Phoenix Launch	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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# GLAST - Launch Site

Tom Rucci

## LAUNCH SERVICES PROGRAM

	Sep	Oct	Nov
<b>LSSP</b>	0	G	G

LSSP	Planned	Released
Preliminary	08/01/2006	09/29/2006
Baseline	04/12/2007	08/27/2007

	Sep	Oct	Nov
<b>CUSTOMER INPUTS</b>	0	G	G

<b>DELIVERABLES</b>	Sep	Oct	Nov
Security and Badging	0	G	G
Training and Personnel Cert	0	G	G
Contingency Plans	0	G	G
Safety LSIM	0	G	G
Radiation Control	0	G	G
Operational Plans	0	Y	Y

## UNIQUE REQUIREMENTS

### LAUNCH SITE UNIQUE

Control of S-Band @ 2086-2126 MHz and GPS 1555-1595 MHz to 1 volt /meter

TDRS Trailer Staging @ ASO

### PPF

Astrotech - Commercial IDIQ

### Spacecraft OPS

AE Office Space - for pad Ops

Sep Oct Nov

0	G	G
0	G	G
0	G	G

0	G	G
0	G	G

0	Y	Y
0	G	G

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# GLAST Budget Breakdown

Benjamin Studenski

## LAUNCH SERVICES PROGRAM

The launch service budget includes:

\* **Launch Services**

- Standard launch Vehicle Services provided by this contract. This line item is firm fixed price and has no flexibility.

\* **Mission Uniques**

- Requirements necessary to customize basic vehicle hardware to meet unique s/c driven requirements.
- Other services directly attributable to the mission.
- Contains some flexibility except when technical risk is affected. Spacecraft requirements are the cost driver.

\* **Integrated Services**

- LSP contractor support service (ELVIS, CAPPs, JBOSC, KICs, etc).
- USAF range costs attributable to the mission
- Limited flexibility

\* **Payload Processing Facility**

- Government facility: spacecraft customers are required to be processed in a government facility if the mission is planetary or has nuclear requirements
- Commercial facility: all other missions have been directed to process in a commercial facility;
- Contains some budget flexibility. Additional spacecraft cleanliness requirements or hazardous requirements may increase PPF costs.

\* **Telemetry**

- Assets required to meet minimum launch vehicle telemetry requirements.
- Includes fixed and deployable ground stations, instrumented aircraft, and ocean assets.
- Limited flexibility requirements are often set late in the integration cycle.

\* **Fly Out**

- Costs that each mission in the 19-Pack must incur.
- Long lead material procurement to mitigate risks due to gaps in production and supplier orders.
- Post-production support for labor skill retention, procure, manufacture, store and maintain under configuration control, mission critical spare parts.
- Pad Sustainability costs for SLC-2 and SLC-17.
- No flexibility-contract costs

\* **Nuclear**

- RTG/RHU processing
- RTG/RHU databooks and approval
- Limited flexibility

\* **Reimbursable**

- Reimbursable FC for transportation, labor, and CMO.

\* **Mission Flexibility**

- Portion of the mission budget available for funding additional task assignments, non-standard services or meeting unexpected requirements.

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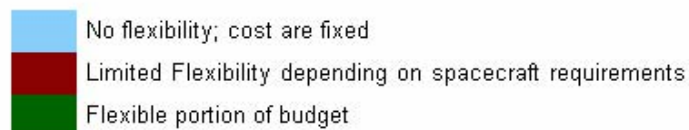
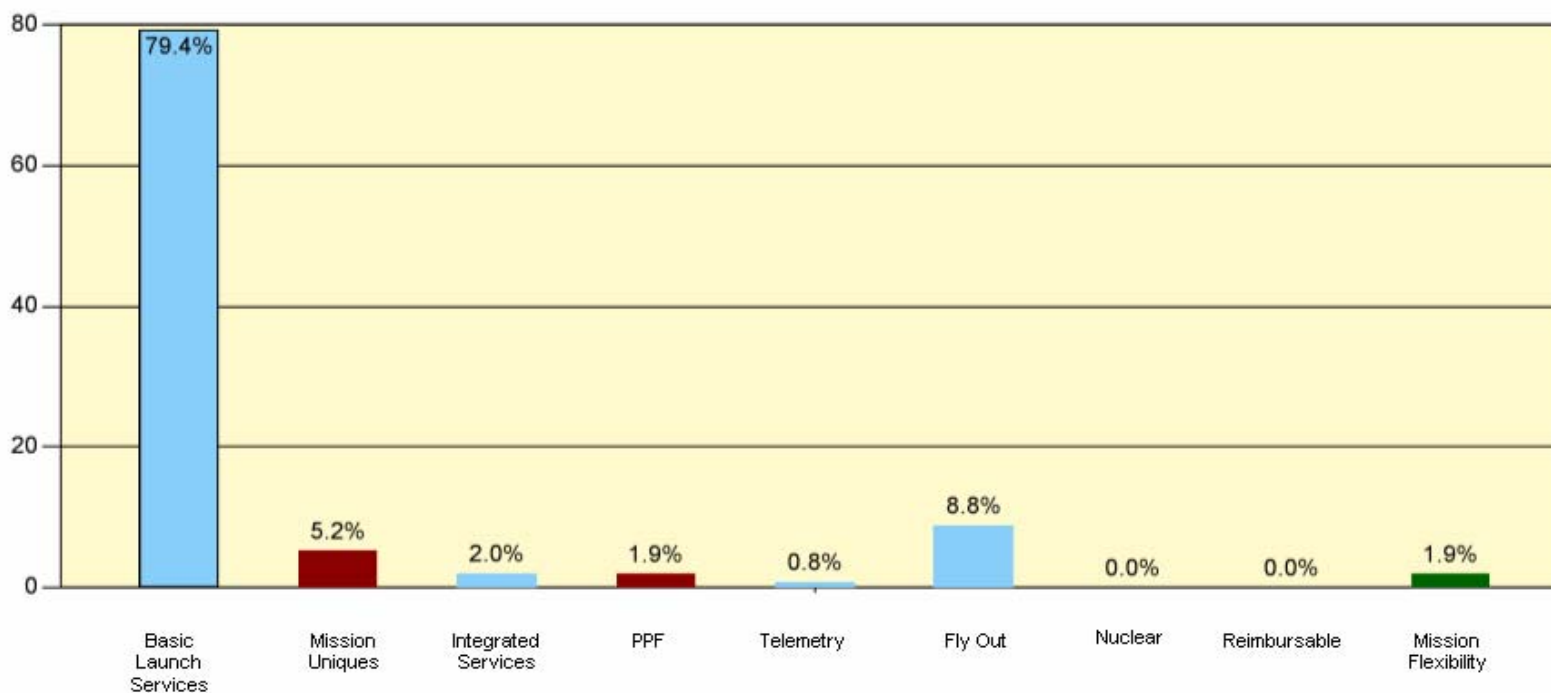
## Launch Services Budget Breakdown

### GLAST Mission

Benjamin Studenski

#### LAUNCH SERVICES PROGRAM

% of Total Launch Service Cost - 11 / 2007



#### Notes:

Note: Above percentages contain dollars calculated prior to the Boeing settlement. Boeing settlement for this mission is \$23.4M.

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# GLAST - Business

Benjamin Studenski

## LAUNCH SERVICES PROGRAM

**Budget**

**Contracts**

Sep	Oct	Nov
G	G	G
G	G	G

Milestone	Date
Milestone #1	Sep 7 2005
Milestone #2	Dec 7 2005
Milestone #3	Mar 7 2006
Milestone #4	Jul 7 2006
Milestone #5	Sep 7 2006
Milestone #6	Dec 7 2006
Milestone #7	June 14 2007
Milestone #8	Nov 05 2007
Milestone #9	May 29 2008

<input type="checkbox"/>	Open Milestone Payment
<input checked="" type="checkbox"/>	Paid Milestone

Contract Status		
Launch Services		
Contract Mod	Number	Description
	287	NSS 35.1 Additional Console Notebooks (CCR NLS-B 241), L-6
	024	ATP Commercial Payload Processing
	190	NSS 11.2 Enhanced fairing internal cleaning
	190	NSS 20.1 Pedigree review
	190	NSS 30.2.4 Additional support for final design load cycle
	190	NSS 9.1.1 Two 61 pin connectors
	190	NSS 11.1 Enhanced fairing environment
	59	NSS 20.3.4 Final Design Load Cycle FDLS
	73	NSS 20.2 additional MIWG
	111	NSS 20.3.4 Second Final Design Load Cycle FDLC

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Contract Mod	Number	Description		
	119	NSS 20.2 Support for MIWG		
	181	NSS 20.2 Early MIWG held 08/02/05		
	184	NSS 26.1 Cat 1 Core Vehicle Analysis		
	190	ATP		
	228	NSS 20.3.2 Preliminary Trajectory Analysis		
Contract Mod (LD)	Number	Description		
	244	Delay from 9/7/2007 to 10/7/2007		
	119	Delay from 9/30/06 to NET 2/28/07		
	155	Delay from 2/28/07 to NET 5/28/07		
	171	Delay from 5/28/07 to 9/7/07		
	289	Delay from 12/14/2007 to NET 1/31/2008		
	301	Delay from NET 1/31/2008 to 2/5/2008		
	279	Delay from 10/7/2007 to 12/14/2007		
	XXX	Delay from 2/5/2008 to 5/29/2008		
Task Assignments	Number	Description	Completion Date	Invoice Paid Date
	NLSB-057	Rerun CLA	06/30/2003	10/16/2003
	NLSB-074	Second re-run coupled load analysis	09/30/2003	06/01/2004
	NLSB-091	CG Lateral Load limit vs. Mass analysis	01/31/2004	04/07/2004
	NLSB-096	61 Pin Connector	06/30/2004	12/10/2004
	NLSB-126	Distributed Aerodynamics Coefficient	07/27/2004	12/10/2004
	NLSB-137	TPAF Shipment & Inspection	12/06/2004	01/07/2005
	NLSB-149	TPAF Inspection at GD/SASS	01/20/2005	03/08/2005
	NLSB-185R2	Gas Budget Analysis	05/19/2006	06/26/2006
	NLSB-188R1	TPAF mod to incorp switch pad	06/19/2006	08/21/2006
	NLSB-204	2nd Stage AC Ducting (GSE shared with STSS)	08/01/2006	
	NLSB-206	PAF Cleaning	10/01/2007	
	NLSB-214	2nd Stage AC Ducting	09/2/2007	
	NLSB-236	Battery Cooling proposal Prep	12/01/2005	9/18/2006
	NLSB-240	EMC/EMI Analysis	11/30/2006	01/19/2007

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Task Assignments	Number	Description	Completion Date	Invoice Paid Date
	NLSB-268	GLAST Special Instrumentation (no cost to GLAST mission budget)		
	NLSB-269	Drill Template Shipment (no cost)		
	NLSB-271	Special Instrumentation 6915 PAF (no cost to GLAST mission budget)		
	NLSB-275	Fairing Extension Cable Modification	09/14/2007	
	NLSB-296	TPAF Inspection	7/06/2007	
	NLSB-300	RS-27 Engine Pedigree Review	12/31/2007	
	NLSB-302	Additional ITA Effort	10/22/2007	
There are no PPF Contract Mods				
Contract Mod (Other)	Number	Description		
	057	NSS 30.1 Flyout Costs		
	085	NSS 30.1 Flyout Costs		
	024	ATP GLAST Payload Processing Task Order		
There are no Issues.				



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# GLAST - Safety and Mission Assurance

Bob Henry

## LAUNCH SERVICES PROGRAM

Assurance Verification Areas	Status		Evidence of Completion			
	Complete	In Work		Sep	Oct	Nov
<b>Quality</b>				Y	Y	Y
Software / Hardware Problems	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Continuing to monitor ULA-Boeing's response to Quality Management System risk.	Y	Y	Y
Alerts	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No GIDEPs at this time	G	G	G
Audits/Inspections/Surveillances	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No Issues at this time	G	G	G
Limited Life Items	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No Issues at this time	G	G	G
<b>Reliability</b>				G	G	G
FMEA/Fishbones/Equivalent	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Reliability data gathering task in process(No issues as of 11/6/07)	G	G	G
Reliability Assessments	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues	G	G	G
<b>Safety</b>				G	G	G
Requirements Definitions	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Tailoring in work	G	G	G
Range Safety & Mission Flight Rules	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Under Review NASA/AF	G	G	G
Licenses/Use Authorizations	<input type="checkbox"/>	<input checked="" type="checkbox"/>	In work	G	G	G
Safety Documentation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Draft Final MSPSP comments provided	G	G	G
Non-compliances	<input type="checkbox"/>	<input checked="" type="checkbox"/>	None identified to date	G	G	G
Contingency Planning	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Deliver prior to SARR	G	G	G
<b>Mission Assurance</b>				Y	G	Y
Lessons Learned	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues	G	G	G
First Flight/Mission Unique items	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues	G	G	G
Test/Qualification/Certification	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues	G	G	G
Mission Assurance Assessments	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Alenia 2nd-Stage Oxidizer Leak, tank assessment for GLAST is in-work; ULA transition.	Y	Y	Y
Risk Management	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No Issues	G	G	G

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## GLAST Comm & Telemetry

Marty Loughheed and Nathan Wood

LAUNCH SERVICES PROGRAM

### Communications

Voice Comm  
Data Comm  
Networks  
Video Comm  
Timing  
RF Comm  
LSSP Comm Annex

Sep	Oct	Nov
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G

### Telemetry

Decommuration Tables  
Data Integrity Test  
Software Lockdown  
Software Inventory  
Console Configuration  
Console Checkout

Sep	Oct	Nov
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0

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# NOAA-N' (Prime) Project Summary

## LAUNCH SERVICES PROGRAM

Mission	NOAA-N' (Prime)
Launch Date	2009/02/01
Launch Vehicle	Delta II
Launch Period Window	TBD
PPF	1610

	Sep	Oct	Nov
<b>OVERALL MISSION</b>	G	G	0

### MISSION MANAGEMENT

	Sep	Oct	Nov
Observatory Status	G	G	0
Manifest/Range	G	G	0
Integrated Schedule	G	G	0
ICD	G	0	0
CDRLs (S/C & LSC)	G	G	0

### LAUNCH SITE

	Sep	Oct	Nov
LSSP	G	G	G
Customer Inputs	G	G	G
PPF	G	G	G
Launch Site Unique	G	G	G
Spacecraft OPS	G	G	G

### SAFETY & MISSION ASSURANCE

	Sep	Oct	Nov
Mission Assurance	Y	Y	Y
Safety	G	G	G
Quality	Y	Y	Y
Reliability	G	G	G

### ENGINEERING

	Sep	Oct	Nov
Launch Vehicle	G	G	G
Mission Specific	G	G	G
Certification	N/A	N/A	N/A
Mission Analysis	G	G	G
ERS/ERB	G	G	G
Launch PAD/GSE	G	G	G
Mission Unique IV&V	N/A	N/A	N/A

### COMM & TELEMETRY

	Sep	Oct	Nov
Communications	G	G	G
Telemetry	0	0	0

### BUSINESS

	Sep	Oct	Nov
Budget	G	G	G
Contracts	G	G	G

### LEGEND

Proceeding on Plan  
 Area of Concern  
 Significant Problem  
 Not Evaluated  
 Not Applicable

G
Y
R
0
N/A

### DOWNRANGE TELEMETRY

	Sep	Oct	Nov
Ground Stations	0	0	0
Deployables	0	0	0
P-3/OTTR	0	0	0

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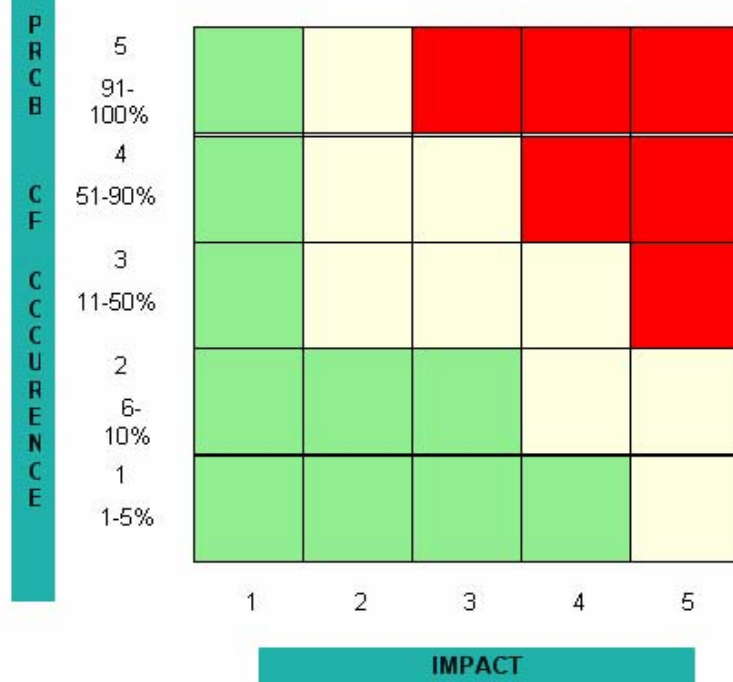


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## NOAA-N' (Prime) - Open/Accepted Risks

### LAUNCH SERVICES PROGRAM

There are no Risks.



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## NOAA-N' (Prime) - Actions / Issues / Concerns

### LAUNCH SERVICES PROGRAM

There are no Actions.

Mission Summary Map	G/Y/R	ISSUES / CONCERNS	WI/ERS/Risk/Problem	Open Date	Due Date
Engineering	G	2nd stage tank must be cleared for potential to leak. Near term tanks will be inspected per THEMIS procedure. WI held open until long term inspection procedure is established.	ERS-06-284	11 Jul 06	16 Dec 07
Mission Management	O	EEB modification plan to meet customer requirements has been submitted by ULA and evaluated by Engineering Selection and implementation plan in-work	WI	09/11/2007	11/30/2007

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## NOAA-N' (Prime) - Significant Events

### LAUNCH SERVICES PROGRAM

Accomplished	
Final Payload Compatibility Drawing released	15 June 06
Draft Preliminary LSSP distributed	2 March 06
PAF to GS fitcheck at Decatur	12 July 06-13 July 06
RF Hazard Analysis	22 May 06
ICD Released	21 June 06
ARAR Initial Release	28 Feb 07
MIWG #5 / GOWG #2 at SLC-2 B1628	20 mar 07-20 Mar 07
Launch moved to Feb 1, 2009	31 Jan 07
Launch Base Integrated Ops Team TIM	week of 6/25-26 June 06
PAF to GS fitcheck 2 at Decatur	29 Aug 07-31 Aug 07
ARAR Final Release	28 Sept 07-18 Oct 07

Planned	
Preliminary LSSP Release	2 March 06-9 Nov 07
Launch Base Integrated Ops Team Meeting	Dec 07
Payload to Blockhouse Wiring Diagram	21 Nov 07-28 Nov 07

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# NOAA-N' (Prime) Mission Management

Dave Breedlove

## LAUNCH SERVICES PROGRAM

### Mission

### Launch Date

Orbit Requirement

### Launch Vehicle Class

### Launch Period Window

### PPF

Mass (kg)

PAD



NOAA-N' (Prime)
2009/02/01
Alt./7237 km / Incl- 98.73 deg
Delta II
TBD
1610
(SC + PAF)
SLC-2

### Observatory Status

### Observatory Status

Schedule

Budget

Deliverables

Testing

ATLO

Instrument

Sep	Oct	Nov
G	G	0
G	G	0
G	G	G
G	G	0
G	G	0
G	G	0
G	G	0

Mission Center:

Program:

PM

LVI

MM

IE

LSIM

PIM

MAM

MCE

MTE

GSFC
NOAA - POES
Wayne McIntyre
Jerry Nagy
Dave Breedlove
Eric Poole
Tricia Fertig
Walner Thervil
Ken Hale
Ralph Mikulas
Mike Patton

### Launch Vehicle Status

### Integrated Schedule

### CDRLs (S/C & LSC)

### Manifest/Range

Ground Stations

Deployables

P-3/OTTR

Sep	Oct	Nov
G	G	0
G	G	0
G	G	0
0	0	0
0	0	0
0	0	0

ICD

Sep	Oct	Nov
G	0	0

SIGNED SCNS:		SCNS IN REVIEW	
SCN #	DATE SIGNED	SCN #	DATE SIGNED
001	09/29/2006	006	
002	09/29/2006	007	in review
003	09/29/2006		
004	09/29/2006		
005	09/29/2006		
008	08/06/2007		
009	08/08/2007		

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## NOAA-N' (Prime) - Engineering

Eric Poole

### LAUNCH SERVICES PROGRAM

	Sep	Oct	Nov
<b>Launch Vehicle</b>	G	G	G
Payload Fairing	G	G	G
First Stage	G	G	G
Second Stage	G	G	G
Third Stage	N/A	N/A	N/A
Payload Attach Fitting	G	G	G
Other	G	G	G
<b>Mission Specific</b>	G	G	G
<b>Certification</b>	N/A	N/A	N/A
<b>Mission Analysis</b>	G	G	G
<b>ERS/ERB</b>	G	G	G
<b>Launch PAD/GSE</b>	G	G	G
<b>Mission Unique IV&amp;V</b>	N/A	N/A	N/A

REQUIREMENT VERIFICATION STATUS	
NUMBER OF REQUIREMENTS	131
VERIFIED TO DATE	0

LAUNCH PAD / GSE MODS (IF APPLICABLE)
There are none.

MISSION UNIQUE STUDIES (IF APPLICABLE)
There are none.

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## NOAA-N' (Prime) - Mission ERB Status

Eric Poole

### LAUNCH SERVICES PROGRAM

R/Y/G	ERS #	TITLE	ERB Req?		Board Held?			Closure		
			Y	N	Y	N	N/A	AI	ENG.	OCE
G	06-046	NOAA-N' ICD review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
G	07-177	NOAA-N Prime Dual Inhibits Waiver	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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## NOAA-N' (Prime) - Vehicle ERB Status

Eric Poole

### LAUNCH SERVICES PROGRAM

R/Y/G	ERS #	TITLE	ERB Req?		Board Held?			Closure		
			Y	N	Y	N	N/A	AI	ENG.	OCE
G	05-378	RS-27 Engine-51 Hoop/Band Separation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-215	Second Stage Tank FM-21 HAR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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## NOAA-N' (Prime) - Launch Site

Tricia Fertig

### LAUNCH SERVICES PROGRAM

	Sep	Oct	Nov
<b>LSSP</b>	G	G	G

LSSP	Planned	Released
Preliminary	12/1/2007	
Baseline	7/1/2008	

	Sep	Oct	Nov
<b>CUSTOMER INPUTS</b>	G	G	G

DELIVERABLES	Sep	Oct	Nov
Security and Badging	G	G	G
Training and Personnel Cert	G	G	G
Contingency Plans	G	G	G
Safety LSIM	G	G	G
Radiation Control	G	G	G
Operational Plans	G	G	G

### UNIQUE REQUIREMENTS

	Sep	Oct	Nov
<b>LAUNCH SITE UNIQUE</b>	G	G	G
GN2 Passive Cooling at SLC-2	G	G	G
<b>PPF</b>	G	G	G
<b>Spacecraft OPS</b>	G	G	G

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# NOAA-N' (Prime) Budget Breakdown

Walner Thervil

## LAUNCH SERVICES PROGRAM

The launch service budget includes:

\* **Launch Services**

- Standard launch Vehicle Services provided by this contract. This line item is firm fixed price and has no flexibility.

\* **Mission Uniques**

- Requirements necessary to customize basic vehicle hardware to meet unique s/c driven requirements.
- Other services directly attributable to the mission.
- Contains some flexibility except when technical risk is affected. Spacecraft requirements are the cost driver.

\* **Integrated Services**

- LSP contractor support service (ELVIS, CAPPs, JBOSC, KICs, etc).
- USAF range costs attributable to the mission
- Limited flexibility

\* **Payload Processing Facility**

- Government facility: spacecraft customers are required to be processed in a government facility if the mission is planetary or has nuclear requirements
- Commercial facility: all other missions have been directed to process in a commercial facility;
- Contains some budget flexibility. Additional spacecraft cleanliness requirements or hazardous requirements may increase PPF costs.

\* **Telemetry**

- Assets required to meet minimum launch vehicle telemetry requirements.
- Includes fixed and deployable ground stations, instrumented aircraft, and ocean assets.
- Limited flexibility requirements are often set late in the integration cycle.

\* **Fly Out**

- Costs that each mission in the 19-Pack must incur.
- Long lead material procurement to mitigate risks due to gaps in production and supplier orders.
- Post-production support for labor skill retention, procure, manufacture, store and maintain under configuration control, mission critical spare parts.
- Pad Sustainability costs for SLC-2 and SLC-17.
- No flexibility-contract costs

\* **Nuclear**

- RTG/RHU processing
- RTG/RHU databooks and approval
- Limited flexibility

\* **Reimbursable**

- Reimbursable FC for transportation, labor, and CMO.

\* **Mission Flexibility**

- Portion of the mission budget available for funding additional task assignments, non-standard services or meeting unexpected requirements.

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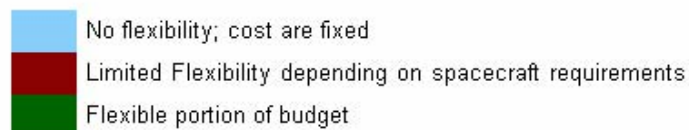
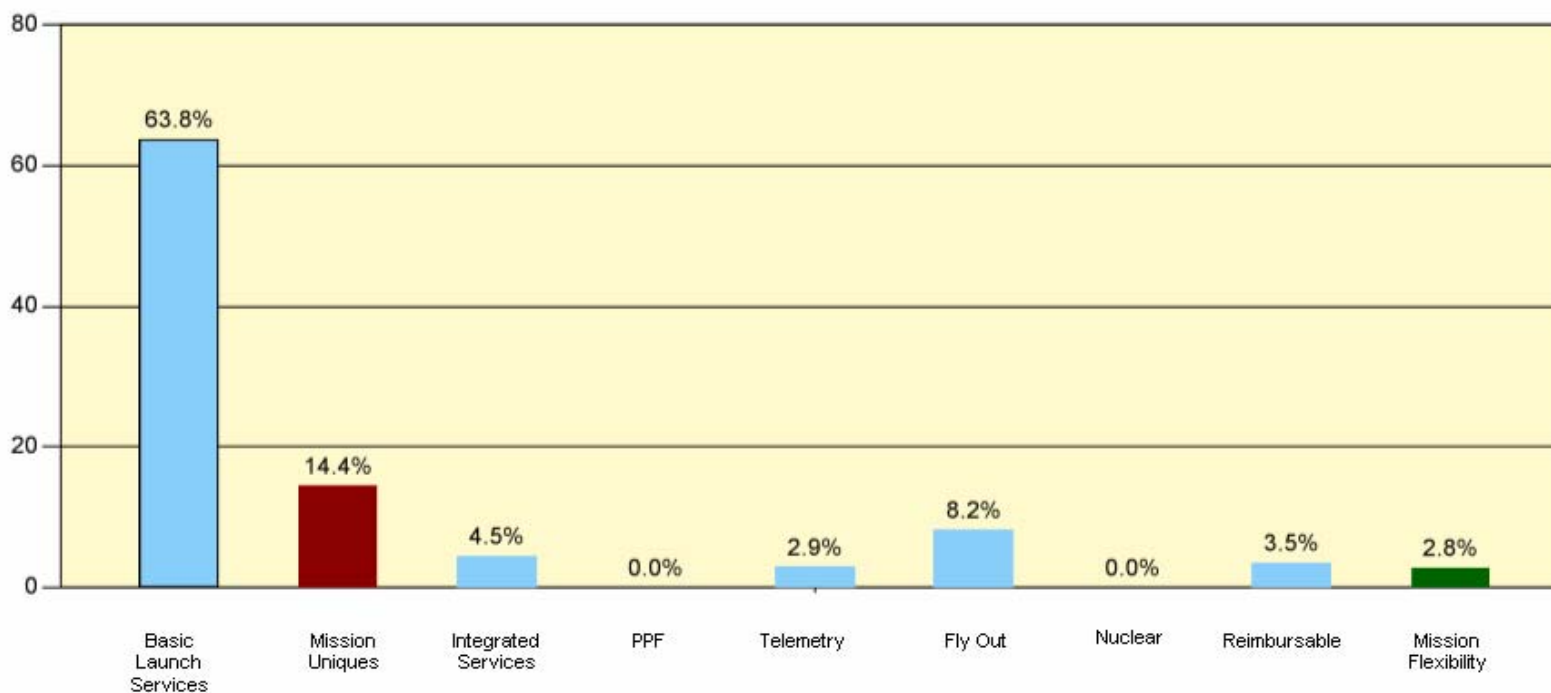
## Launch Services Budget Breakdown

NOAA-N' (Prime) Mission

Walner Thervil

### LAUNCH SERVICES PROGRAM

% of Total Launch Service Cost - 11 / 2007



Notes:

Variance: No changes from the previous quarter.

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## NOAA-N' (Prime) - Business

Walner Thervil

### LAUNCH SERVICES PROGRAM

**Budget**

**Contracts**

Sep	Oct	Nov
G	G	G
G	G	G

Milestone	Date
Milestone 1	6/30/03
Milestone 2	4/30/04
Milestone 3	5/1/06
Milestone 4	8/1/05
Milestone 5	11/1/05
Milestone 6	3/1/06
Milestone 7	7/1/06
Milestone 8	12/1/07
Milestone 9	2/1/09

<input type="checkbox"/>	Open Milestone Payment
<input type="checkbox"/>	Paid Milestone

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Contract Status				
Launch Services				
Contract Mod	Number	Description		
	157	Add launch readiness date of October 31, 2006 and request storage prices		
	72	Mission ATP w/ NSS 27.1 Western Range Launch & MUS 9.1 One-time Multi Trajectory/Multi Azimuth Scope Reduction		
	80	Customized payment schedule		
	258	Request NSS 25.2.1 Monthly Storage and NSS 25.2.2 (CY08 and CY09) per Vehicle Charge.		
Contract Mod (LD)	Number	Description		
	82	Launch Delay from 06/03/2005 to 10/30/2005		
	93	Launch Delay from 10/30/2005 to 01/30/2006		
	117	Launch Delay from 01/30/2006 to NET 12/2007		
	274	Launch Delay from NET 12/2007 to 02/1/2009		
Task Assignments	Number	Description	Completion Date	Invoice Paid Date
	ML-029	Compat with Delta II Review - NOAA-N'	1/2/1997	2/3/1997
	NLSB-232 R3	Access platform concept study	4/30/2007	7/10/2007
	NLSB-238 R1	Explosion-proof telephone at SLC-2	11/15/2006	11/20/2006
	NLSB-252 R2	EEB Temperature Control Concept Study	07/01/2007	
	NLSB-267	Vehicle Modification for Payload fairing Re-Radiation System	01/01/2009	
There are no PPF Contract Mods				
There are no Other Contract Mods				
There are no Issues.				

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# NOAA-N' (Prime) - Safety and Mission Assurance

Ken Hale

## LAUNCH SERVICES PROGRAM

Assurance Verification Areas	Status		Evidence of Completion	Sep	Oct	Nov
	Complete	In Work				
<b>Quality</b>				Y	Y	Y
Software / Hardware Problems	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Tracking Alenia tank issues	Y	Y	Y
Alerts	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues being tracked.	G	G	G
Audits/Inspections/Surveillances	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues being tracked.	G	G	G
Limited Life Items	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues being tracked.	G	G	G
<b>Reliability</b>				G	G	G
FMEA	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues being tracked.	G	G	G
Reliability Assessments	<input type="checkbox"/>	<input checked="" type="checkbox"/>	S/C RF inhibit reliability review is complete. SMA agrees with the GSFC assessment. Negligable impact to the overall Launch Vehicle reliability.	G	G	G
<b>Safety</b>				G	G	G
Requirements Definitions	<input type="checkbox"/>	<input checked="" type="checkbox"/>	S/C RF inhibit assessment is complete. Safety agrees with ICD waiver to dual RF inhibit requirement.	G	G	G
Range Safety & Mission Flight Rules	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues being tracked	G	G	G
Licenses/Use Authorizations	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues being tracked	G	G	G
Safety Documentation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Spacecraft ARAR review complete.	G	G	G
Non-compliances	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues being tracked	G	G	G
Contingency Planning	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues being tracked	G	G	G
<b>Mission Assurance</b>				Y	Y	Y
Lessons Learned	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues being tracked.	G	G	G
First Flight/Mission Unique items	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues being tracked.	G	G	G
Test/Qualification/Certification	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues being tracked.	G	G	G
Mission Assurance Assessments	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Tracking Alenia tank issues	Y	Y	Y
Risk Management	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Alenia tanks are yellow for Delta-II. Tank assigned to NOAA-N' will be evaluated along with any potential risk. Mission Assurance agrees with ICD waiver to dual RF inhibit requirement.	Y	Y	Y

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## NOAA-N' (Prime) Comm & Telemetry

Ralph Mikulas and Mike Patton

LAUNCH SERVICES PROGRAM

### Communications

Voice Comm  
Data Comm  
Networks  
Video Comm  
Timing  
RF Comm  
LSSP Comm Annex

Sep	Oct	Nov
G	G	G
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0

### Telemetry

Decommuration Tables  
Data Integrity Test  
Software Lockdown  
Software Inventory  
Console Configuration  
Console Checkout

Sep	Oct	Nov
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0

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# NPP Project Summary

## LAUNCH SERVICES PROGRAM

Mission	NPP
Launch Date	2009/04/30
Launch Vehicle	Delta II
Launch Period Window	Daily
PPF	Commercial PPF

### OVERALL MISSION

Sep	Oct	Nov
Y	Y	Y

### MISSION MANAGEMENT

Observatory Status  
Manifest/Range  
Integrated Schedule  
ICD  
CDRLs (S/C & LSC)

Sep	Oct	Nov
Y	Y	Y
Y	Y	Y
Y	Y	Y
Y	Y	G
Y	Y	Y

### LAUNCH SITE

LSSP  
Customer Inputs  
PPF  
Launch Site Unique  
Spacecraft OPS

Sep	Oct	Nov
Y	Y	Y
Y	Y	Y
Y	Y	Y
G	G	G
G	G	G

### SAFETY & MISSION ASSURANCE

Mission Assurance  
Safety  
Quality  
Reliability

Sep	Oct	Nov
Y	Y	Y
G	G	G
Y	Y	Y
G	G	G

### ENGINEERING

Launch Vehicle  
Mission Specific  
Certification  
Mission Analysis  
ERS/ERB  
Launch PAD/GSE  
Mission Unique IV&V

0	0	G
0	0	G
0	0	N/A
0	0	G
0	0	N/A
0	0	G
0	0	N/A

### COMM & TELEMETRY

Communications  
Telemetry

G	G	G
0	0	0

### BUSINESS

Budget  
Contracts

G	G	G
G	G	G

### LEGEND

Proceeding on Plan  
Area of Concern  
Significant Problem  
Not Evaluated  
Not Applicable

G
Y
R
0
N/A

### DOWNRANGE TELEMETRY

Ground Stations  
Deployables  
P-3/OTTR

0	0	0
0	0	0
0	0	0

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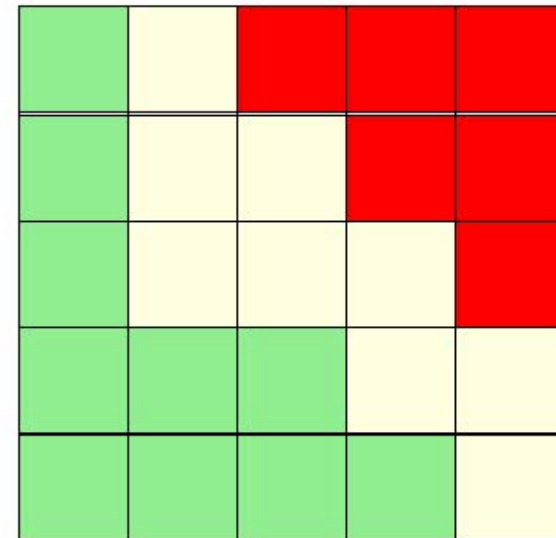
## NPP - Open/Accepted Risks

LAUNCH SERVICES PROGRAM

There are no Risks.

P  
R  
C  
B  
C  
F  
C  
C  
C  
U  
R  
R  
E  
N  
C  
E

5  
91-  
100%  
4  
51-90%  
3  
11-50%  
2  
6-  
10%  
1  
1-5%



1 2 3 4 5  
IMPACT

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## NPP - Actions / Issues / Concerns

### LAUNCH SERVICES PROGRAM

There are no Actions.

Mission Summary Map	G/Y/R	ISSUES / CONCERNS	WI/ERS/Risk/Problem	Open Date	Due Date
Engineering	0	Separation switches are not clocked per the standard location; they are rotated 90 degrees	WI		
Engineering	0	Potential VLC disconnect	WI		
Business	0	Launch has delayed to Q4/2009 timeframe. Need to assess cost impact to include shelf life (19 pack period of perf.) last users of Delta II pads, and other issues. Additional delay to NET 9/09 likely.	WI	08/01/2006	09/30/2007

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## NPP - Significant Events

### LAUNCH SERVICES PROGRAM

Accomplished	
Early CLA	
Preliminary IRD received, latest rev March 2005	
Kick off meeting	
Fairing Door inputs	
S/C Mission Ops Review	08/15/2005-08/17/2005
Fairing Clearance analysis and Compatibility Drawing Review comple	
Received Draft IRD	11/01/2007

Planned	
Preliminary ICD release	04/30/2008

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# NPP Mission Management

Bruce Reid

## LAUNCH SERVICES PROGRAM

### Mission

### Launch Date

Orbit Requirement

### Launch Vehicle Class

### Launch Period Window

### PPF

Mass (kg)

PAD

NPP
2009/04/30
196 deg. flight azimuth
Delta II
Daily
Commercial PPF
2206 kg
Other

### Observatory Status

### Observatory Status

Schedule

Budget

Deliverables

Testing

ATLO

Instrument

Sep Oct Nov

Y	Y	Y
Y	Y	Y
G	G	G
Y	Y	Y
Y	Y	Y
Y	Y	Y
Y	Y	Y

Mission Center:

Program:

PM

LVI

MM

IE

LSIM

PIM

MAM

MCE

MTE

GSFC

EOS-NPOESS

Ken Schwer

T.Jones / S.Antoniak

Bruce Reid

Sarah LeValley

Tricia Fertig

Benjamin Studenski

Ken Hale

Ralph Mikulas

Tuan Doan



### ICD

Sep Oct Nov

Y	Y	G
---	---	---

There are no signed SCNs

There are no SCNs in Review

### Launch Vehicle Status

### Integrated Schedule

### CDRLs (S/C & LSC)

### Manifest/Range

Ground Stations

Deployables

P-3/OTTR

Y	Y	Y
Y	Y	Y
Y	Y	Y
0	0	0
0	0	0
0	0	0

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## NPP - Engineering

Sarah LeValley

### LAUNCH SERVICES PROGRAM

	Sep	Oct	Nov
<b>Launch Vehicle</b>	0	0	G
Payload Fairing	0	0	Y
First Stage	0	0	G
Second Stage	0	0	G
Third Stage	0	0	N/A
Payload Attach Fitting	0	0	G
Other	0	0	0
<b>Mission Specific</b>	0	0	G
<b>Certification</b>	0	0	N/A
<b>Mission Analysis</b>	0	0	G
<b>ERS/ERB</b>	0	0	N/A
<b>Launch PAD/GSE</b>	0	0	G
<b>Mission Unique IV&amp;V</b>	0	0	N/A

REQUIREMENT VERIFICATION STATUS	
NUMBER OF REQUIREMENTS	0
VERIFIED TO DATE	0

LAUNCH PAD / GSE MODS (IF APPLICABLE)
There are none.

MISSION UNIQUE STUDIES (IF APPLICABLE)
There are none.

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## NPP - Mission ERB Status

Sarah LeValley

### LAUNCH SERVICES PROGRAM

R/Y/G	ERS #	TITLE	ERB Req?		Board Held?			Closure		
			Y	N	Y	N	N/A	AI	ENG.	OCE
0	04-17	NPP MECO Assessment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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## NPP - Vehicle ERB Status

Sarah LeValley

LAUNCH SERVICES PROGRAM

There are no Vehicle ERBs for this mission.

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## NPP - Launch Site

Tricia Fertig

### LAUNCH SERVICES PROGRAM

	Sep	Oct	Nov
<b>LSSP</b>	Y	Y	Y

LSSP	Planned	Released
Preliminary	12/2007	
Baseline	10/2008	

	Sep	Oct	Nov
<b>CUSTOMER INPUTS</b>	Y	Y	Y

#### DELIVERABLES

	Sep	Oct	Nov
Security and Badging	0	0	0
Training and Personnel Cert	0	0	0
Contingency Plans	0	0	0
Safety LSIM	Y	Y	Y
Radiation Control	0	0	0
Operational Plans	0	0	0

#### UNIQUE REQUIREMENTS

	Sep	Oct	Nov
<b>LAUNCH SITE UNIQUE</b>	G	G	G
<b>PPF</b>	Y	Y	Y
<b>Spacecraft OPS</b>	G	G	G

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# NPP Budget Breakdown

Benjamin Studenski

## LAUNCH SERVICES PROGRAM

The launch service budget includes:

\* **Launch Services**

- Standard launch Vehicle Services provided by this contract. This line item is firm fixed price and has no flexibility.

\* **Mission Uniques**

- Requirements necessary to customize basic vehicle hardware to meet unique s/c driven requirements.
- Other services directly attributable to the mission.
- Contains some flexibility except when technical risk is affected. Spacecraft requirements are the cost driver.

\* **Integrated Services**

- USAF range costs attributable to the mission
- Limited flexibility

\* **Payload Processing Facility**

- Government facility: spacecraft customers are required to be processed in a government facility if the mission is planetary or has nuclear requirements
- Commercial facility: all other missions have been directed to process in a commercial facility;
- Contains some budget flexibility. Additional spacecraft cleanliness requirements or hazardous requirements may increase PPF costs.

\* **Telemetry**

- Assets required to meet minimum launch vehicle telemetry requirements.
- Includes fixed and deployable ground stations, instrumented aircraft, and ocean assets.
- Limited flexibility requirements are often set late in the integration cycle.

\* **Fly Out**

- Costs that each mission in the 19-Pack must incur.
- Long lead material procurement to mitigate risks due to gaps in production and supplier orders.
- Post-production support for labor skill retention, procure, manufacture, store and maintain under configuration control, mission critical spare parts.
- Pad Sustainability costs for SLC-2 and SLC-17.
- No flexibility-contract costs

\* **Nuclear**

- RTG/RHU processing
- RTG/RHU databooks and approval
- Limited flexibility

\* **Reimbursable**

- Reimbursable FC for transportation, labor, and CMO.

\* **Mission Flexibility**

- Portion of the mission budget available for funding additional task assignments, non-standard services or meeting unexpected requirements.

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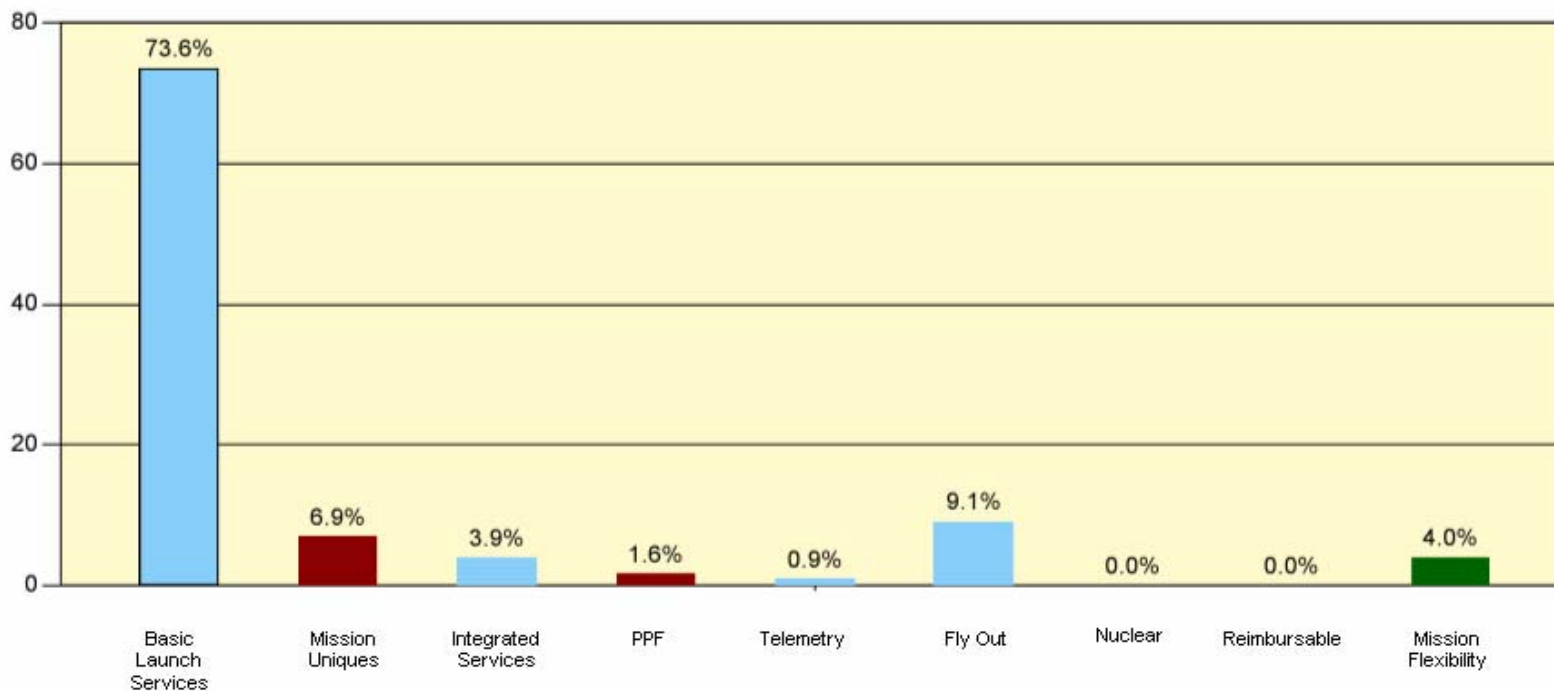
## Launch Services Budget Breakdown

### NPP Mission

Benjamin Studenski

#### LAUNCH SERVICES PROGRAM

% of Total Launch Service Cost - 11 / 2007



- No flexibility; cost are fixed
- Limited Flexibility depending on spacecraft requirements
- Flexible portion of budget

#### Notes:

Note: Above percentages contain dollars calculated prior to the Boeing settlement. Boeing settlement for this mission is \$6.6M

Variance: Open Equitable Adjustment claim for delay to 4/30/2009

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## NPP - Business

Benjamin Studenski

### LAUNCH SERVICES PROGRAM

**Budget**

**Contracts**

Sep	Oct	Nov
G	G	G
G	G	G

Milestone	Date
Milestone 1	07/31/2004
Milestone 2	10/31/2004
Milestone 3	01/31/2005
Milestone 4	04/30/2005
Milestone 5	12/01/2005
Milestone 6	04/30/2008
Milestone 7	07/30/2008
Milestone 8	10/30/2008
Milestone 9	01/30/2009
Milestone: 10	04/30/2009

<input type="checkbox"/>	Open Milestone Payment
<input type="checkbox"/>	Paid Milestone

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Contract Status				
Launch Services				
Contract Mod	Number	Description		
	062	NSS 20.3.3: Quick Turnaround Coupled Load Analysis		
	084	NSS 9.1.1: Two 61 Pin Electric Interface from Fairing to Payload		
	162	MU (1): Remove Re-Radiating System from Mission Uniques		
	141	NSS 10.1: Remove camera NSS		
Contract Mod (LD)	Number	Description		
	171	Delay from 10/31/06 to NET 3/1/07		
	206	Delay from 3/1/07 to 4/30/09		
Task Assignments	Number	Description	Completion Date	Invoice Paid Date
	NLSB-121	TPAF Mods	11/26/2004	12/02/2004
	NLSTO-037R1	CLA Time Histories	10/31/2003	11/30/2003
There are no PPF Contract Mods				
Contract Mod (Other)	Number	Description		
	057	Flyout costs		
	085	Flyout costs		
	125	Flyout costs		
	Issues			
G	Equitable Adjustment amount being negotiated for launch delay to 4/30/2009			



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Center

## NPP - Safety and Mission Assurance

Ken Hale

### LAUNCH SERVICES PROGRAM

Assurance Verification Areas	Status		Evidence of Completion			
	Complete	In Work		Sep	Oct	Nov
<b>Quality</b>				Y	Y	Y
Software / Hardware Problems	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Tracking Alenia tank issues	Y	Y	Y
Alerts	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues being tracked	G	G	G
Audits/Inspections/Surveillances	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues being tracked	G	G	G
Limited Life Items	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues being tracked	G	G	G
<b>Reliability</b>				G	G	G
FMEA/Fishbones/Equivalent	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues being tracked	G	G	G
Reliability Assessments	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues being tracked	G	G	G
<b>Safety</b>				G	G	G
Requirements Definitions	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues being tracked	G	G	G
Range Safety & Mission Flight Rules	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues being tracked	G	G	G
Licenses/Use Authorizations	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues being tracked	G	G	G
Safety Documentation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues being tracked	G	G	G
Non-compliances	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues being tracked	G	G	G
Contingency Planning	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues being tracked	G	G	G
<b>Mission Assurance</b>				Y	Y	Y
Lessons Learned	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues being tracked.	G	G	G
First Flight/Mission Unique items	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues being tracked.	G	G	G
Test/Qualification/Certification	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues being tracked.	G	G	G
Mission Assurance Assessments	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Tracking Alenia tank issues	Y	Y	Y
Risk Management	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Alenia tanks are yellow for Delta II. NPP tank to be assessed along with any residual risk.	Y	Y	Y

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## NPP Comm & Telemetry

Ralph Mikulas and Tuan Doan

### LAUNCH SERVICES PROGRAM

#### Communications

Voice Comm  
Data Comm  
Networks  
Video Comm  
Timing  
RF Comm  
LSSP Comm Annex

Sep	Oct	Nov
G	G	G
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0

#### Telemetry

Decommuration Tables  
Data Integrity Test  
Software Lockdown  
Software Inventory  
Console Configuration  
Console Checkout

Sep	Oct	Nov
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0



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# GLORY Project Summary

## LAUNCH SERVICES PROGRAM

Mission	GLORY
Launch Date	2008/12/15
Launch Vehicle	Taurus
Launch Period Window	TBD
PPF	Commercial PPF

	Sep	Oct	Nov
<b>OVERALL MISSION</b>	Y	Y	Y

### MISSION MANAGEMENT

	Sep	Oct	Nov
Observatory Status	R	R	Y
Manifest/Range	G	G	Y
Integrated Schedule	Y	Y	Y
ICD	G	G	G
CDRLs (S/C & LSC)	G	G	G

### LAUNCH SITE

	Sep	Oct	Nov
LSSP	0	G	G
Customer Inputs	G	G	G
PPF	G	G	G
Launch Site Unique	G	G	G
Spacecraft OPS	G	G	G

### SAFETY & MISSION ASSURANCE

	Sep	Oct	Nov
Mission Assurance	G	G	G
Safety	G	G	G
Quality	G	Y	Y
Reliability	G	G	G

### ENGINEERING

Launch Vehicle	G	G	G
Mission Specific	G	G	G
Certification	Y	Y	Y
Mission Analysis	Y	G	G
ERS/ERB	G	G	G
Launch PAD/GSE	G	G	G
Mission Unique IV&V	0	0	0

### COMM & TELEMETRY

Communications	G	0	0
Telemetry	0	0	0

### BUSINESS

Budget	G	G	Y
Contracts	G	G	G

### LEGEND

Proceeding on Plan  
 Area of Concern  
 Significant Problem  
 Not Evaluated  
 Not Applicable

G
Y
R
0
N/A

### DOWNRANGE TELEMETRY

Ground Stations	G	G	G
Deployables	G	G	G
P-3/OTTR	G	G	G

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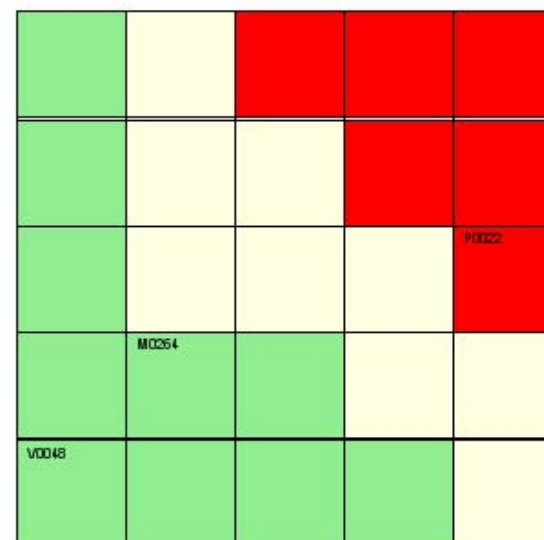
## GLORY - Open/Accepted Risks

LAUNCH SERVICES PROGRAM

		Condition
RYG Trend	RiskID	Consequence
G	V0048	Failure analysis of a Pacific Scientific PN 107800-201 detonator (SN 4498) that failed service life extension testing uncovered a manufacturing process vulnerability in which detonators could be reworked and inadvertently returned to production without the correct load of explosive material. Accepted for Peg and Taurus fleets on March 23, 2007
		Failure to initiate third stage ignition or FTS destruct ordnance chain on command.
G	M0264	The OCO and Glory payload fairing (PLF) production schedules are ahead of the Ballast ring Mission Unique Design Reviews. The outcome of the ballast ring design process impacts the location of the PLF doors which will be described in the Mechanical ICD.
		If the ballast ring design changes as an outcome of the design review process, the OCO and Glory PLF door cutouts (as defined in the MICD change) may not be located in the correct position to support S/C access after PLF installation. Or, if the MICD is not approved by NASA, cost and schedule of PLF manufacturing may be impacted.
R	P0022	NASA Atlas and Taurus missions not spaced properly
		Definite shift in NASA FPB manifest dates for missions affected

P  
R  
C  
B  
  
C  
F  
  
C  
C  
C  
U  
R  
R  
E  
N  
C  
E

5  
91-  
100%  
4  
51-90%  
3  
11-50%  
2  
6-  
10%  
1  
1-5%



1 2 3 4 5  
IMPACT

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## GLORY - Actions / Issues / Concerns

### LAUNCH SERVICES PROGRAM

There are no Actions.

Mission Summary Map	G/Y/R	ISSUES / CONCERNS	WI/ERS/Risk/Problem	Open Date	Due Date
Engineering	G	Glory electrical requirements at the pad are similar to OCO and also need the facility modification in work for OCO. Make sure modification covers both S/C needs.	ERS	04/17/2007	05/31/2008
Engineering	Y	OCO and Glory are currently manifested for the same month. This will cause issues with deliverables and resources within Orbital. Currently working each delivery conflict on case by case basis. Decision from FPB expected by Dec 1 2007. (Ref P0022)	WI	04/17/2007	12/01/2007
Mission Management	O	Glory has indicated there is currently inadequate budget to fund APS cost growth, this could cause an impact to schedule. Glory still holding to current launch date with this issues	WI	04/11/2007	
Engineering	G	The current schedule for the next CLA with the ballast ring are to be completed on Jan. 2008.	WI	8/30/07	1/31/08
Engineering	G	At the MUPDR, LSG reported that with the addition of the 22 inch ballast ring, a portion of the s/c radiator panel intrudes into the fairing standard static envelope. This item will remain open until a dynamic clearance analysis is performed, results of which will reported at the MUCDR in January 2008.	WI	8/28/2007	1/31/2008
Engineering	G	LSG has agreed the ITA can be up to 8000 nodes as long as it is in Desktop format. S/C has delivered model and it is in review by LSP and estimated to be delivered to LSG by Oct 19 2007. Final delivery on Nov 8, 2007. LSG is in work on ITA	WI	08/01/2007	11/30/2007

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## GLORY - Significant Events

### LAUNCH SERVICES PROGRAM

Accomplished	
Received update SC model and LSP is performing a base drive analysis. Inputs for LSG received 4/16/2007. Inhouse done and in-work comparing results to LSG and Swales analysis. Difficulties getting data to GSFC	1/31/07-07/31/2007
MIWG held at KSC on March 14.	03/14/2007-03/14/2007
S/C updated mass properties	07/06/2007-7/24/2007
Master ICD, EICD (with ICP001), and MICD (with ICP001) baselines have been signed.	06/25/2007-10/26/2007
Contract Mod for ballast ring turned on	06/22/2007-7/24/2007
ICD PEER review and ERB	07/25/2007-08/13/2007
Ballast Ring MUPDR	08/28/2007-8/28/07
Shock test on bus level only has been eliminated at request of S/C	12/7/07-10/17/2007
CLA mission analysis for all 3 requested load cases using the old model were received and sent to s/c in support of their environmental test review for the instrument.	8/25/07-8/28/07
S/C thermal model (8k nodes) to be delivered to LSG this month.	08/01/2007-10/19/2007
Received payload processing proposals and evaluated them. Discussions with offerors in response to questions generated scheduled for w/o 9/10.	9/5-9/7

Planned	
PMA inputs received. PMA has been recieved by LSP and S/C. Currently in review.	8/23/07-11/30/2007
MIWG/GOWG at VAFB, delayed from Nov due to uncertainty on PPF processing location. MIWG to be held at GSFC on Nov 28	11/28/07-11/28/07
T8/T9 MUCDR	1/31/08
Next iteration of MU pad electrical upgrade expected.	1/1/08-1/31/08
T8/T9 MUSAR	8/28/08
CLA with the new s/c model (received in Oct 16 2007) will start after the OCO CLA is complete. The OCO CLA is currently in work and planned to be complete in the beginning of November. LSG needs Glory CLA by mid Oct 2007	11/07/2007-01/31/2008
Reviewed SOW for use of PPODS on OCO/Glory missions.	08/24/2007-10/31/2007
ERB for Softride for T8/T9 to be held Nov 29 by telecon	11/29/2007-12/15/2007

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# GLORY Mission Management

Garrett Skrobot

## LAUNCH SERVICES PROGRAM

### Mission

### Launch Date

Orbit Requirement

### Launch Vehicle Class

### Launch Period Window

### PPF

Mass (kg)

PAD

GLORY
2008/12/15
640 km/98.189 degree inclination
Taurus
TBD
Commercial PPF
528 kg (TB
567E



ICD

Sep	Oct	Nov
G	G	G

SIGNED SCNS:		There are no SCNs in Review
SCN #	DATE SIGNED	
MICD ICP1	10/10/2007	
EICD ICP1	11/02/2007	

### Observatory Status

### Observatory Status

Schedule

Budget

Deliverables

Testing

ATLO

Instrument

Sep	Oct	Nov
R	R	Y
R	R	Y
G	G	Y
G	G	G
G	G	G
G	G	G
R	R	Y

### Launch Vehicle Status

### Integrated Schedule

### CDRLs (S/C & LSC)

### Manifest/Range

Ground Stations

Deployables

P-3/OTTR

Sep	Oct	Nov
Y	Y	Y
G	G	G
G	G	Y
G	G	G
G	G	G
G	G	G

Mission Center:

Program:

PM

LVI

MM

IE

LSIM

PIM

MAM

MCE

MTE

GSFC
ESSP
Bryan Fafaul
John Satrom
Garrett Skrobot
Sarah LeValley
Mark Mertz
Ken Carr
Laura McDaniel
Mike Patton
Nathan Wood

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# GLORY - Engineering

Sarah LeValley

## LAUNCH SERVICES PROGRAM

	Sep	Oct	Nov
<b>Launch Vehicle</b>	G	G	G
Payload Fairing	Y	G	G
First Stage	G	G	G
Second Stage	G	G	G
Third Stage	G	G	G
Payload Attach Fitting	G	G	G
Other	0	0	0
<b>Mission Specific</b>	G	G	G
<b>Certification</b>	Y	Y	Y
<b>Mission Analysis</b>	Y	G	G
<b>ERS/ERB</b>	G	G	G
<b>Launch PAD/GSE</b>	G	G	G
<b>Mission Unique IV&amp;V</b>	0	0	0

REQUIREMENT VERIFICATION STATUS	
NUMBER OF REQUIREMENTS	0
VERIFIED TO DATE	0

LAUNCH PAD / GSE MODS (IF APPLICABLE)
There are none.

MISSION UNIQUE STUDIES (IF APPLICABLE)
TA029 Glory Random Vibration Analysis
Glory/OCO Ballast Ring

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## GLORY - Mission ERB Status

Sarah LeValley

### LAUNCH SERVICES PROGRAM

R/Y/G	ERS #	TITLE	ERB Req?		Board Held?			Closure		
			Y	N	Y	N	N/A	AI	ENG.	OCE
G	05-381	GLORY Spacecraft Questionnaire	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	06-388	Taurus T8/T9 RCS Moment Arm Issue	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-27	S/C shock test (Taurus missions) using Flight PAF	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-80	Incorrect Holes Drilled in Critical GSE Separation Test Ring	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-189	T8/T9 Ballast Ring MUPDR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-259	Glory ICD Review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-302	T-0 purge for Glory and OCO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-173	Taurus T8/T9 Softride Isolators	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-188	Taurus T8/T9 MURR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-190	Taurus T8/T9 MUCDR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-191	Taurus T8/T9 MUSAR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	06-328	OCO/Glory EGSE Electrical Harness Pad Upgrade	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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## GLORY - Vehicle ERB Status

Sarah LeValley

### LAUNCH SERVICES PROGRAM

R/Y/G	ERS #	TITLE	ERB Req?		Board Held?			Closure		
			Y	N	Y	N	N/A	AI	ENG.	OCE
G	05-052	SBS/OR Heritage Flight Computer Life Extension	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	04-460	Pegasus-TVC lot 10 cap failure power board	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	06-113	Safe and Arm, Detonator Anomaly	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-069	S&A Failure to Rotate	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-076	Orion Motor Case Resin Requalification	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-113	Safe & Arm (New Build) Process Review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-114	Parker TVC H-Bridge Shoot-through during T4 testing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-138	Taurus Stage 1 TVA Kit Changes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-144	Orion Motor Nozzle Rayon Replacement	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
G	07-169	Taurus - TDRSS Transmitter PDR (LCT2 Xmtr)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-328	7Ah Avionics Battery, Taurus First Flight, OCO/Glory	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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## GLORY - Launch Site

Mark Mertz

### LAUNCH SERVICES PROGRAM

	Sep	Oct	Nov
<b>LSSP</b>	0	G	G

LSSP	Planned	Released
Preliminary	07/2007	7/2007
Baseline	04/2008	

	Sep	Oct	Nov
<b>CUSTOMER INPUTS</b>	G	G	G

DELIVERABLES	Sep	Oct	Nov
Security and Badging	G	G	G
Training and Personnel Cert	G	G	G
Contingency Plans	G	G	G
Safety LSIM	G	G	G
Radiation Control	G	G	G
Operational Plans	G	G	G

### UNIQUE REQUIREMENTS

	Sep	Oct	Nov
<b>LAUNCH SITE UNIQUE</b>	G	G	G

<b>PPF</b>	G	G	G
Commercial PPF	G	G	G

<b>Spacecraft OPS</b>	G	G	G
Fueling	G	G	G

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# GLORY Budget Breakdown

Ken Carr

## LAUNCH SERVICES PROGRAM

The launch service budget includes:

\* **Launch Services**

- Standard launch Vehicle Services provided by this contract. This line item is firm fixed price and has no flexibility.

\* **Mission Uniques**

- Requirements necessary to customize basic vehicle hardware to meet unique s/c driven requirements.
- Other services directly attributable to the mission.
- Contains some flexibility except when technical risk is affected. Spacecraft requirements are the cost driver.

\* **Integrated Services**

- LSP contractor support service (ELVIS, CAPPs, JBOSC, KICs, etc).
- USAF range costs attributable to the mission
- Limited flexibility
- 

\* **Payload Processing Facility**

- Government facility: spacecraft customers are required to be processed in a government facility if the mission is planetary or has nuclear requirements
- Commercial facility: all other missions have been directed to process in a commercial facility;
- Contains some budget flexibility. Additional spacecraft cleanliness requirements or hazardous requirements may increase PPF costs.

\* **Telemetry**

- Assets required to meet minimum launch vehicle telemetry requirements.
- Includes fixed and deployable ground stations, instrumented aircraft, and ocean assets.
- Limited flexibility requirements are often set late in the integration cycle.

\* **Fly Out**

- Costs that each mission in the 19-Pack must incur.
- Long lead material procurement to mitigate risks due to gaps in production and supplier orders.
- Post-production support for labor skill retention, procure, manufacture, store and maintain under configuration control, mission critical spare parts.
- Pad Sustainability costs for SLC-2 and SLC-17.
- No flexibility-contract costs

\* **Nuclear**

- RTG/RHU processing
- RTG/RHU databooks and approval
- Limited flexibility

\* **Reimbursable**

- Reimbursable FC for transportation, labor, and CMO.

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<sup>a</sup> **Mission Flexibility**

- Portion of the mission budget available for funding additional task assignments, non-standard services or meeting unexpected requirements.



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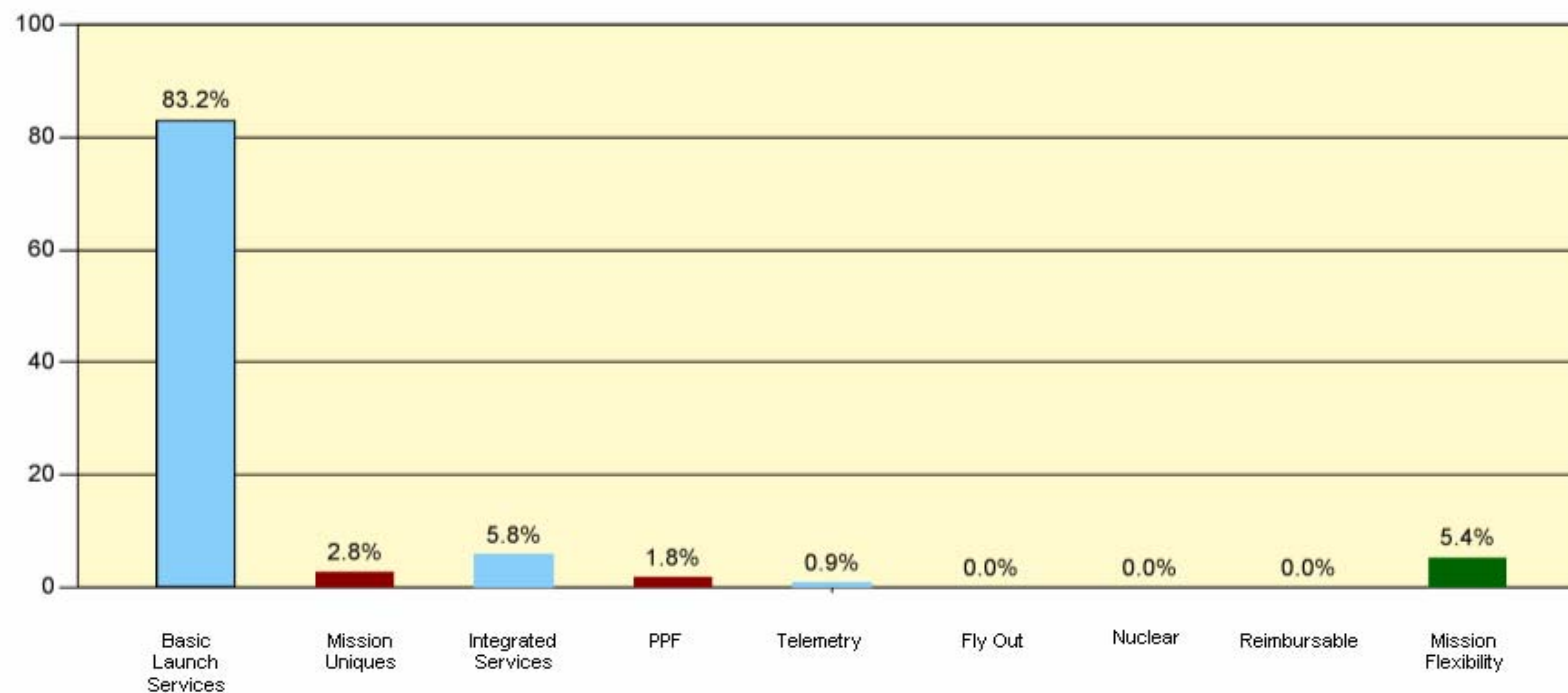
## Launch Services Budget Breakdown

### GLORY Mission

Ken Carr

#### LAUNCH SERVICES PROGRAM

% of Total Launch Service Cost - 11 / 2007



- No flexibility; cost are fixed
- Limited Flexibility depending on spacecraft requirements
- Flexible portion of budget

#### Notes:

Variance: Significant increases in Mission Flexibility due to reduction in liens for PPF and Telemetry and removed lien for additional shock test.

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## GLORY - Business

Ken Carr

### LAUNCH SERVICES PROGRAM

**Budget**

**Contracts**

Sep	Oct	Nov
G	G	Y
G	G	G

Milestone	Date
Milestone 1	11/15/2005
Milestone 2a	02/15/2006
Milestone 2b	06/15/2006
Milestone 3a	10/15/2006
Milestone 4	03/15/2007
Milestone 5	08/15/2007
Milestone 6	11/15/2007
Milestone 7	06/15/2008
Milestone 8a	09/15/2008
Milestone 8b	11/15/2008
Milestone 9	02/15/2009
Milestone 3b	12/15/2006

<input type="checkbox"/>	Open Milestone Payment
<input type="checkbox"/>	Paid Milestone

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Contract Status				
Launch Services				
Contract Mod	Number	Description		
	17	NSS Intrument purge & Payload Isolation System		
	22	Ballast Ring for launch vehicle		
There are no LD Contract Mods				
Task Assignments	Number	Description	Completion Date	Invoice Paid Date
	SP-071	Taurus Isolation Random Vibe Environment		
There are no PPF Contract Mods				
There are no Other Contract Mods				
There are no Issues.				



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# GLORY - Safety and Mission Assurance

Laura McDaniel

## LAUNCH SERVICES PROGRAM

Assurance Verification Areas	Status		Evidence of Completion	Sep	Oct	Nov
	Complete	In Work				
<b>Quality</b>				G	Y	Y
Software / Hardware Problems	<input type="checkbox"/>	<input checked="" type="checkbox"/>	The Taurus vehicle is under certification efforts by LS SMA and NASA LSP. Due to outstanding Data Requests for Taurus vendors from previous site visits, all hardware and software fabrication operations are not fully certified.	G	Y	Y
Alerts	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues	G	G	G
Audits/Inspections/Surveillances	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues or concerns	G	G	G
Limited Life Items	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues	G	G	G
<b>Reliability</b>				G	G	G
FMEA/Fishbones/Equivalent	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Failure analyses assessments have been initiated along with vehicle certification planning	G	G	G
Reliability Assessments	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Reliability assessment of reliability requirement for certification is in progress. Design Reliability Report from Orbital is 11 months behind schedule (originally due December 15) .	G	G	G
<b>Safety</b>				G	G	G
Requirements Definitions	<input type="checkbox"/>	<input checked="" type="checkbox"/>	ICD & Safety documentation tailoring in work	G	G	G
Range Safety & Mission Flight Rules	<input type="checkbox"/>	<input checked="" type="checkbox"/>	In-work (Range Safety)	G	G	G
Licenses/Use Authorizations	<input type="checkbox"/>	<input checked="" type="checkbox"/>	In-work	G	G	G
Safety Documentation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Range Safety Identified Potential Noncompliance (Nov.13.2006): Orbital has addressed (5-18-07) the potential non-compliances as well as other general items and is keeping the pace in resolving these important issues.	G	G	G
Non-compliances	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues identified to date	G	G	G
Contingency Planning	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues (no planning required at this time)	G	G	G
<b>Mission Assurance</b>				G	G	G
Lessons Learned	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No previous NASA Taurus missions - Other KSC LL's will be reviewed/addressed	G	G	G
First Flight/Mission Unique items	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Certification Effort in work	G	G	G
Test/Qualification/Certification	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Certification Effort in work	G	G	G
Mission Assurance Assessments	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues	G	G	G

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Risk Management



Risk Management System is working properly



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## GLORY Comm & Telemetry

Mike Patton and Nathan Wood

LAUNCH SERVICES PROGRAM

### Communications

Voice Comm  
Data Comm  
Networks  
Video Comm  
Timing  
RF Comm  
LSSP Comm Annex

Sep	Oct	Nov
G	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0

### Telemetry

Decommuration Tables  
Data Integrity Test  
Software Lockdown  
Software Inventory  
Console Configuration  
Console Checkout

Sep	Oct	Nov
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0

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